ORDER NO.AVS9311796C8

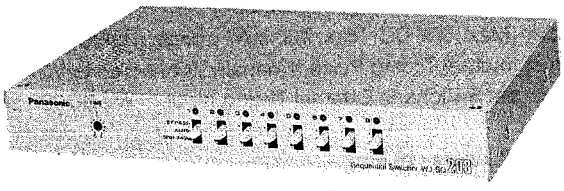
Service Manual

Sequential Switcher

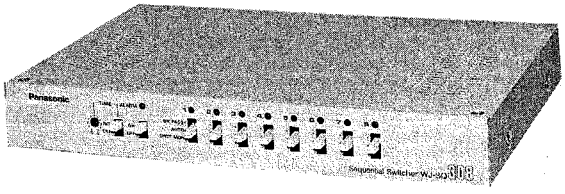
WJ-SQ208 / WJ-SQ308

Rack Angle Bracket

WV-Q61



WJ-SQ208



WJ-SQ308

SPECIFICATIONS

‹WJ-SQ208›

Camera Inputs :	1.0 Vp-p Composite / 75 ohms (BNC) x 8 with Loop-through Outputs
Camera Outputs :	Sequence / Spot Out
	1.0Vp-p Composite / 75 ohms (BNC) x 1
Frequency Response :	4 MHz ± 1 dB
Gain :	Unity
Switching Interval :	Approx. 1 to 30 sec.
Power Source :	12V DC, 0.1A
Ambient Operating Temperature :	–10°C to +50°C (+14°F to +122°F)
Dimensions (W x H x D) :	330 x 44 x 200 mm (13" x 1-3/4" x 7-7/8")
Weight :	1.9 kg (4.2 lbs.)

Dimensions and weights are approximate.
Specifications are subject to change without notice.

Panasonic

<WJ-SQ308>

Camera Inputs :	1.0 Vp-p Composite / 75 ohms (BNC) x 8 with Loop-through Outputs
Camera Outputs :	Alarm / Sequence Out : 1.0Vp-p Composite / 75 ohms (BNC) x 1 Alarm / Spot Out : 1.0Vp-p Composite / 75 ohms (BNC) x 1
Frequency Response :	4 MHz ± 1 dB
Gain :	Unity
Switching Interval :	Approx. 1 to 30 sec.
EXT. Time Input :	5.0 Vp-p Pulse input Timing Pulse from Time-lapse VCR, or other Sequential Switcher's External Timing Output (WJ-SQ308 or WJ-527)
EXT. Time Output :	Open Collector (Max. 30V DC, Max. 100 mA), Looping through of EXT. Time In or Internal Timing Pulse (Normally connected to VCR or to other Sequential Switcher's External Timing Input : WJ-SQ308 or WJ-527
Alarm Input :	Open Collector, 8 Inputs (16 Pin)
Operating Time of Alarm :	Factory Set : Approx. 1 min. (Internally Adjustable 1 to 5 min.)
Alarm Output :	Open Collector (Max. 30V DC, Max. 100 mA)
Reset Output :	5.0V DC
Recover Input :	Open Collector
Power Source :	12V DC, 0.12A
Ambient Operating Temperature :	–10°C to +50°C (+14°F to +122°F)
Dimensions (W X H X D) :	330 x 44 x 200 mm (13" x 1-3/4" x 7-7/8")
Weights :	1.9Kg (4.2lbs)

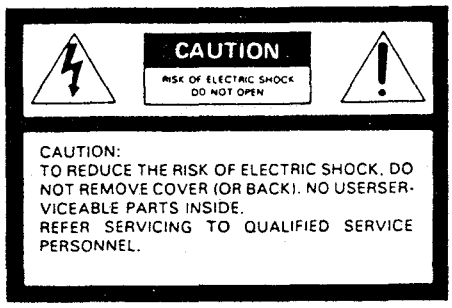
Dimensions and weights are approximately.
Specifications are subject to change without notice.

ACCESSORY (for WJ-SQ308)

Alarm Imput Connetor.....1 pc.

OPTIONAL ACCESSORY

Rack Angle Bracket WV-Q61


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION:
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USERSERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol warns the user that uninsulated voltage within the unit may have suificient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.

This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included.
Therefore, it should be read carefully in order to avoid any problems.

IMPORTANT SAFETY NOTICE

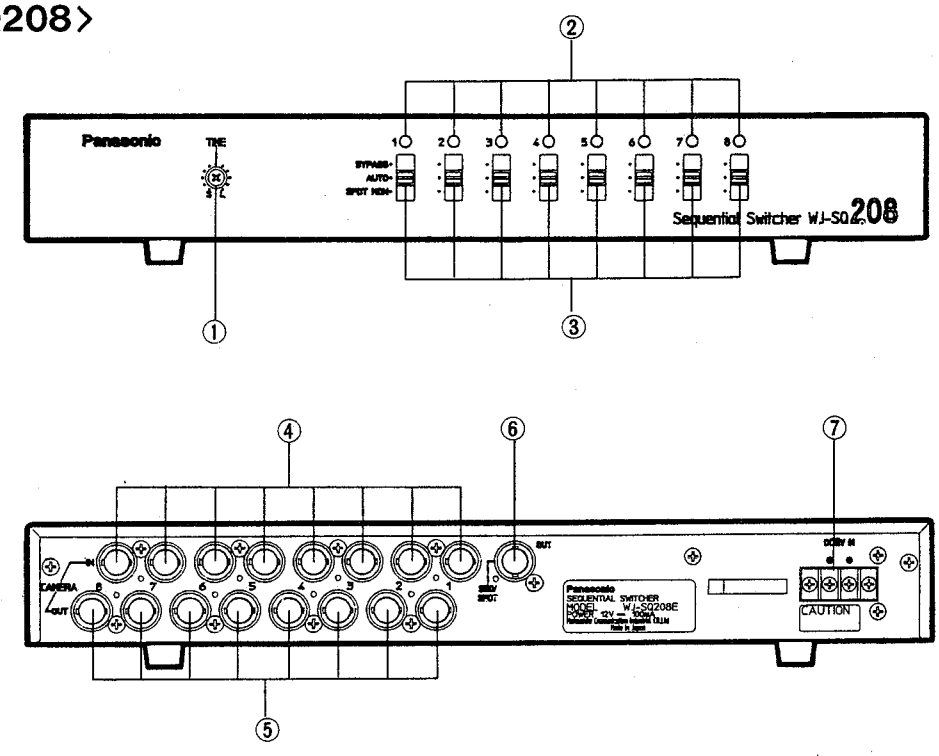
There are special components used in this equipment which are important for safety. These parts are indicated by the " ⚠ " mark on the schematic diagram and the replacement parts list. It is essential that these critical parts should be repleced with manufacture's specified parts to prevent shock, fire, or other hazards.
Do not modify the original design without permission of manufacture.

CONTENTS

MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS 2
CONNECTION 7
RACK MOUNTING INFORMATION 7
CIRCUIT DESCRIPTION 8
DISASSEMBLING PROCEDURE 10
CHIP COMPONENTS 11
BLOCK DIAGRAM 13
SCHEMATIC DIAGRAM
WJ-SQ208 16
WJ-SQ308 17
CONDUCTOR VIEW
WJ-SQ208 15
WJ-SQ308 18
APPEARANCE OF IC, TRANSISTOR AND DIODE 19
EXPLODED VIEW 20
REPLACEMENT PARTS LIST 23

MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS

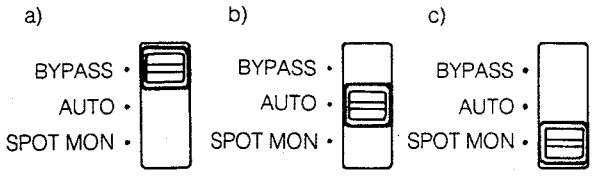
<WJ-SQ208>



1. Time Control (S/L)
The sequential switcher's timing can be continuously changed from approx. 1 to 30 seconds by turning this control.

2. Sequence Output Indicators (1/2/3/4/5/6/7/8)
A lit lamp indicates that the signals of the corresponding camera are available at the Camera Output Connector.

3. 3-position Selection Switches (BYPASS/AUTO/SPOT MON)



a) BYPASS mode
When this switch is set to the BYPASS position, the camera signal in this position will be skipped regardless of the presence of a video signal while the other camera signals will be fed out in sequence. In other words, the signal of that camera will not be fed out of Spot/ Sequential Output Connector (6). This function may be very convenient in cases where monitoring requirements vary from time to time.

b) AUTO mode
When the switch is set to this position, the signal of the camera will be automatically in sequence regardless of the presence of a video signal from that source.

c) SPOT mode
When the switch is set to this position, the signal of the camera in that position will be output from the Sequential/Spot Output Connector (6) so that this camera signal can be selectively monitored. During this time, sequence operation goes on and sequence outputs are fed out from the Sequential/Spot Output Connector (6). If two or more cameras are set in this mode, the signal of the lower numbered camera in this position will be used as output signal.

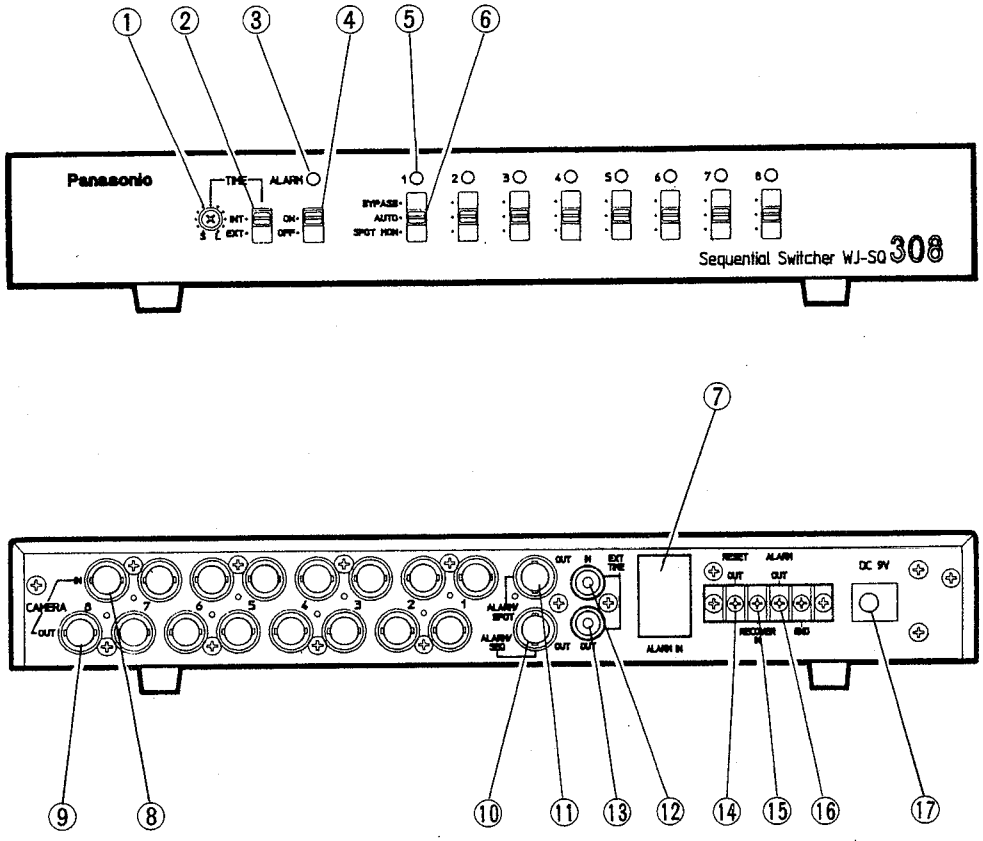
4. Camera Input Connectors (CAMERA IN)
These are used to connect the video output signals from cameras. When connected, the signals will be terminated at 75 ohms.

5. Camera Output Connectors (CAMERA OUT)
The video input signals connected to the Camera Input Connectors (4) are looped through to these connectors.

6. Sequential/Spot Output Connector (SPOT/SEQ OUT)
This is a sequential switcher output connector which always produces sequence outputs.

7. DC 12V IN Terminal
This terminal accepts 12V DC power source (10.8 - 16V).

<WJ-SQ308>



1. Time Control (S/L)

The sequential switcher's timing can be continuously changed from approx. 1 to 30 seconds by turning this control.

2. Time Internal / External Selection Switch (INT/EXT)

This switch is used to select the timing control signal source.

INT: Select this position when the sequential switcher's timing is controlled using the Time Control(1).

EXT: Select this position when the sequential switcher's timing is controlled by an external timing pulse.

If trigger signals from a Time Lapse VTR are connected to the External Timing Input Connector (12) when using it in combination with this sequential switcher, the sequential switcher will be controlled by the trigger signals from that Time Lapse VTR.

3. Alarm Indicator

When the Alarm On/Off Selection Switch is set to the ON position, this indicator lights.

When the alarm signal is supplied to the Alarm Signal Input Connector in the Alarm On mode, this indicator blinks.

4. Alarm On/Off Selection Switch (ON/OFF)

ON: Select this position when an alarm input into the Alarm Input Connector will automatically operate the alarm function. After a predetermining interval of alarm operation, the normal sequence operation is resumed.

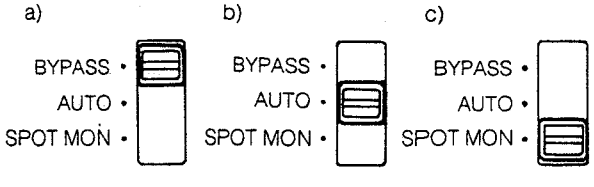
OFF: Select this position when the alarm function is suspended so that no alarm operation will take place even if an alarm input is received.

In this case, a reset signal will be output from the Reset Output Terminal (14) of the Alarm Input Connector (7) on the back panel.

5. Sequence Output Indicators (1/2/3/4/5/6/7/8)

A lit lamp indicates that the signals of the corresponding camera are available at the Camera Output Connector.

6. 3-position Selection Switches (BYPASS/AUTO/SPOT MON)



a) BYPASS mode
When this switch is set to the BYPASS position, the camera signals in this position will be skipped regardless of the presence of a video signals while the other camera signals will be fed out in sequence. In other words, the signals of that camera will not be fed out of Alarm Sequential Output Connector(10). This function may be very convenient in cases where monitoring requirements vary from time to time.

b) AUTO mode
When the switch is set to this position, the signals of the camera will be automatically in sequence regardless of the presence of a video signal from that source.

c) SPOT mode
When the switch is set to this position, the signals of the camera in that position will be output from of the Alarm Spot Output Connector(11) so that this camera signal can be selectively monitored. During this time, sequence operation goes on and sequence outputs are fed out from the Alarm Sequential Output Connector(10). If two or more cameras are set in this mode, the signal of the lower numbered camera in this position will be used as output signal.

7. Alarm Input Connector (ALARM IN)
The alarm sensor closure switches are connected to these terminals.

8. Camera Input Connectors (CAMERA IN)
These are used to connect the video output signals from cameras. When connected, the signals will be terminated at 75 ohms.

9. Camera Output Connectors (CAMERA OUT)
The video input signals connected to the Camera Input Connectors (8) are looped through to these connectors.

10. Alarm Sequential Output Connector (ALARM/SEQ OUT)
This is a sequential switcher output connector which always produces sequence outputs except during an alarm connection when the output switches to the alarmed camera position.

11. Alarm Spot Output Connector (ALARM/SPOT OUT)
This is a manual video switcher output connector, which normally produces the same sequence operation output signals as the alarm sequential output. However, if a camera selection switch is in the SPOT MON position, that camera will be output from this connector.

12. External Timing Input Connector (EXT TIME IN)
This input connectors for sequence operation with external timing pulses. Connect the trigger signals from a Panasonic Time Lapse VTR to this connector.

13. External Timing Output Connector (EXT TIME OUT)
This connector outputs timing pulse signals which are synchronized with the sequence operation. As shown in the system application examples, two or more switchers may be used together in either a synchronized or asynchronous manner. When synchronized, the External Timing Output Connector of one switcher (the Master unit) is connected to the External Timing Input Connector the second unit (the Slave unit). The Slave unit's TIME INT/EXT SELECTION SWITCH should be set to the EXT position. The Master unit's TIME INT/EXT SELECTION SWITCH may be to either INT or EXT, depending on whether a Time Lapse VTR used.

14. Reset Output Terminal (RESET OUT)
This terminal is connected to the Alarm On/Off Selection Switch (4). When setting the Alarm On/Off Selection Switch (4) to the OFF position and connecting the reset terminal of the Time Lapse VTR to this terminal, the alarm function will stop.

15. Recover Input Terminal (RECOVER IN)
When this is connected to the recover output terminal on the Time Lapse VTR, this switcher will stay in the alarm mode as long as the Time Lapse VTR stays in its alarm mode. After that, normal sequence operation is resumed.
Note: Time Lapse VTR alarm mode must be set for a minimum of 60 seconds for this feature to function.

16. Alarm Output Terminal (ALARM OUT)
If this terminal is connected to the alarm input terminal on the Time Lapse VTR, the Time Lapse VTR will be automatically switched over from long-time recording to normal-time recording at the same time as this switcher starts alarm operation. This terminal is an open collector output, to which loads of up to 30V 100mA can be connected. Thus it may be used for controlling an alarm device by using a relay, for example.
If this terminal is connected to the detection connector on the time-date generator WJ-810, the cumulative number of alarms and the time of the last alarm are indicated.

17. DC 12V IN Terminal
This terminal accepts 12V DC power source (10.8 - 16V).

Cautions

1. The External Timing Output Connector(13) and Alarm Output Terminal(16) are open collector outputs. They will not operate unless loads are connected to them externally and DC power (not to exceed (Max.30V 100mA) is supplied externally.

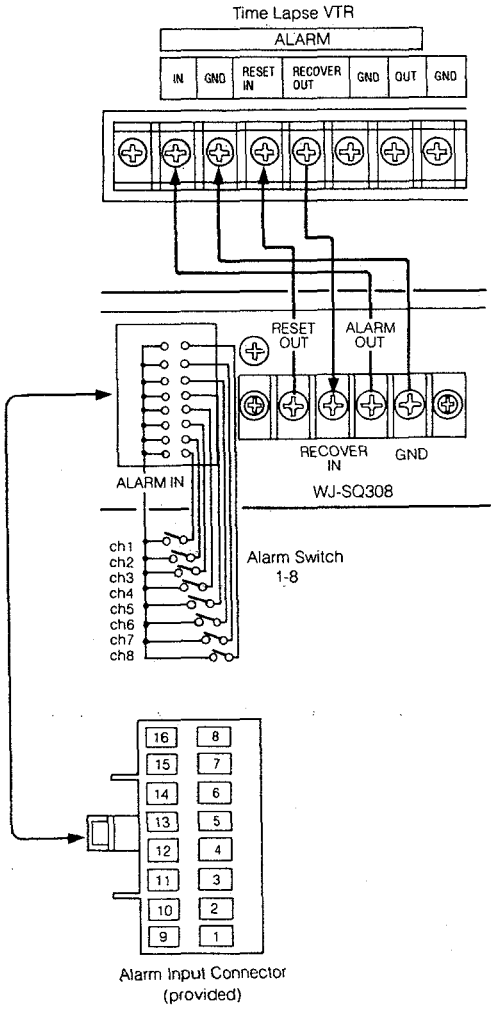
2. When the Alarm On/Off Selection Switch (4) is set to the OFF position, the alarm mode will not operate even if an alarm input is received. When the sequential switcher is connected to the Time Lapse VTR, the alarm will not operate if either of them has its alarm selector in the Alarm OFF (Reset) position.

3. If the Alarm Spot Output Connector (11) is used for monitoring and if any one of the 3-position Selection Switches (6) is in the SPOT MON position, only the signal of the camera which is in the SPOT MON mode will be output, even during an alarm condition. If none of the 3-position Selection Switches are in the Spot Mon position during an alarm condition, the Alarm Spot Output Connector will output the alarmed camera position.

4. Alarm Time Control is preset for 60 second duration at the factory.
   However, this duration can be varied within the range of 1 to 5 minutes.It is varied by turning the internal Alarm Time Control VR2.

Alarm Input

- Connect the sensor switches and the Time Lapse VTR with the proper cables. The sensor should have an open-collector output or non-voltage contact.

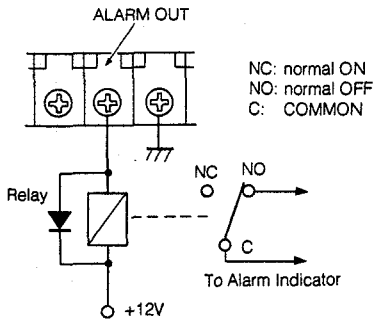


Alarm Input Connector (provided)

Pin No.	Signals	Wire Color
1	ch1 Input	Brown
2	ch2 Input	Red
3	ch3 Input	Orange
4	ch4 Input	Yellow
5	ch5 Input	Green
6	ch6 Input	Blue
7	ch7 Input	Purple
8	ch8 Input	Grey
9	ch1 earth	Black
10	ch2 earth	Black
11	ch3 earth	Black
12	ch4 earth	Black
13	ch5 earth	Black
14	ch6 earth	Black
15	ch7 earth	Black
16	ch8 earth	Black

Note: Be sure to insulate the wire(s) which is (are) not connected.

- The capacity of the Alarm Output Connector is 30V DC maximum, 100mA or less

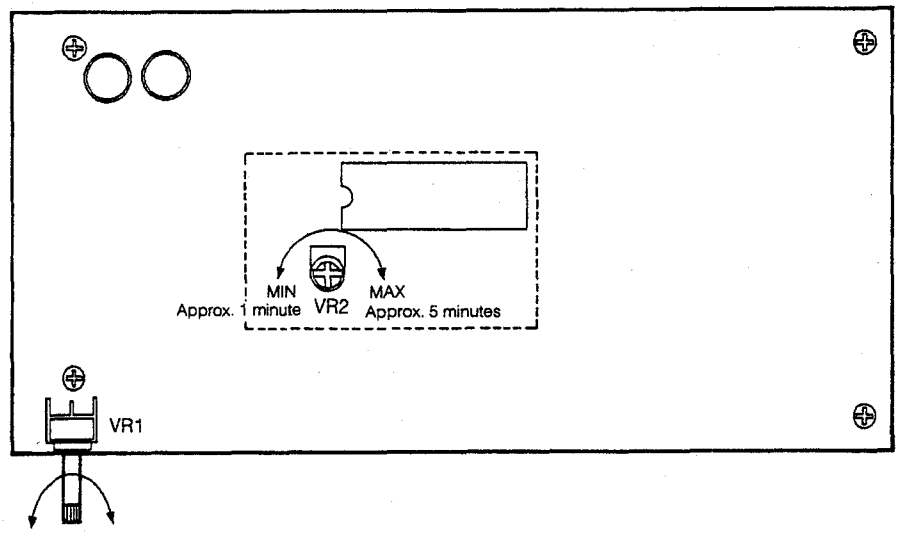


Adjustment

Alarm Timing Adjustment

The alarm timing interval is preset to approx. 1 minute. And by turning the VR2, the alarm timing interval can be set from 1 to 5 minutes.

1. Connect the Alarm Input Connector (7) with the Ground Terminal (GND). The alarm operation can be obtained and the Alarm Indicator (3) blinks.
2. Adjust the alarm timing interval by turning the VR2 while observing the Alarm Indicator (3) status.

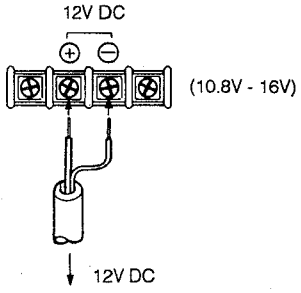


Note : In case of using this switcher with the Time Lapse VTR, be sure to adjust the alarm timing interval of this switcher so that it is shorter than the Time Lapse VTR.

CONNECTION

DC Power Cable

1. Keep the camera power switched OFF during installation.
2. A power supply of 12V DC is required.
3. Connect the power cable to the 12V DC Power Terminal Stripe on the rear panel of this unit.



Resistance of copper wire [at 20°C (68°F)]

Copper wire size (AWG)	# 24 (0.22mm²)	#22 (0.33mm²)	#20 (0.52mm²)	#18 (0.83mm²)
Resistance ohms/m	0.078	0.050	0.030	0.018

- Calculation method of maximum cable length between camera and power supply.

  16V DC > R x 0.2 x L > 10.8V DC

  L: Cable length (Meter)

  R: Resistance of copper wire (Ω/m)

  VA: DC voltage of power supply

  L standard = VA - 12/0.2 x R (Meter)

  L minimum = VA - 16/0.2 x R (Meter)

  L maximum = VA - 10.8/0.2 x R (Meter)

RACK MOUNTING INFORMATION

The Rack Angle Bracket WV-Q61 is provided for mounting this Sequential Switcher on the standard 19" EIA Rack.

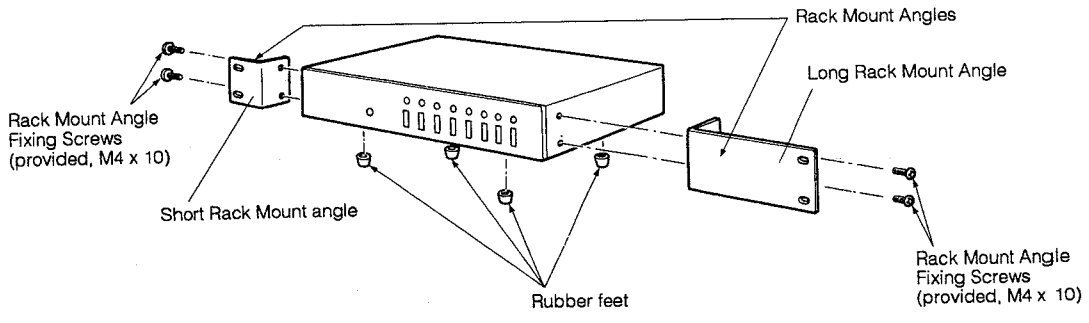
(1) Remove four rubber feet from the bottom of this Switcher.

(2) Fix the short Rack Mount Angle onto the right side of the switcher and long one onto the left side switcher using four Rack Mount Angle Fixing Screws(provided).

(3) Mount the switcher onto the rack using four screws (local procurement).

Cautions :

1. Keep 1-unit or more space for both the top and bottom of the unit or install a cooling fun in the rack for cooling.
2. Secure the rear of the unit to the rack by using the additional holding angles(procured locally) when vibration is present.



CIRCUIT DESCRIPTION

• Pin Identification

<WJ-SQ208>

The pin identification of IC1 (MC74HC574AN) is as follows.

Pin No.	Pin Name	In/Out	Description
1	OC	In	Output Control
2	D1	In	Data 1
3	D2	In	Data 2
4	D3	In	Data 3
5	D4	In	Data 4
6	D5	In	Data 5
7	D6	In	Data 6
8	D7	In	Data 7
9	D8	In	Data 8
10	GND	—	Ground
11	CLK	In	Clock Pulse
12	Q8	Out	Sequence Control 8
13	Q7	Out	Sequence Control 7
14	Q6	Out	Sequence Control 6
15	Q5	Out	Sequence Control 5
16	Q4	Out	Sequence Control 4
17	Q3	Out	Sequence Control 3
18	Q2	Out	Sequence Control 2
19	Q1	Out	Sequence Control 1
20	VCC	In	+5V DC Power

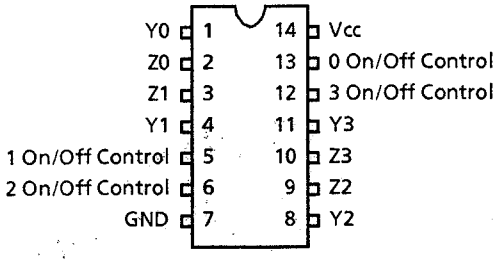
<WJ-SQ308>

The pin identification of IC3 (UPD65006CA16) is as folloss.

Pin No.	Pin Name	In/Out	Description
1	GND	—	Ground
2	VD2	—	Not Used
3	NTPL	—	Not Used
4	INEX	In	Internal/External time Select
5	ITRI	In	Sequential Time Control
6	ALRS	Out	Alarm Reset
7	ALTI	In	Alarm Time
8	ALTR	Out	Alarm Trigger
9	EREV	In	External Recover In
10	FSW1	In	BYPASS SW Data 1
11	FSW2	In	BYPASS SW Data 2
12	FSW3	In	BYPASS SW Data 3
13	FSW4	In	BYPASS SW Data 4
14	FSW5	In	BYPASS SW Data 5
15	FSW6	In	BYPASS SW Data 6
16	FSW7	In	BYPASS SW Data 7
17	FSW8	In	BYPASS SW Data 8
18	VSYN	In	Vertical Sync.
19	X OUT	Out	Oscillator Output
20	X IN	In	Oscillator Input
21	VCLK	—	Not Used
22	TS1	—	Not Used
23	TS2	—	Not Used
24	GND	—	Ground
25	VDD	In	+5V DC Power
26	ALED	Out	Alarm Indicator
27	SEL8	Out	Sequence Control 8
28	SEL7	Out	Sequence Control 7
29	SEL6	Out	Sequence Control 6
30	SEL 5	Out	Sequence Control 5
31	SEL4	Out	Sequence Control 4
32	SEL3	Out	Sequence Control 3
33	SEL2	Out	Sequence Control2
34	SEL1	Out	Sequence Control 1
35	—	—	Not Used
36	ETRI	In	External Trigger Input
37	ETRO	Out	External Trigger Output
38	ALI8	In	Alarm Input 8
39	ALI7	In	Alarm Input 7
40	ALI6	In	Alarm Input 6
41	ALI5	In	Alarm Input 5
42	ALI4	In	Alarm Input 4
43	ALI3	In	Alarm Input 3
44	ALI2	In	Alarm Input 2
45	ALI1	In	Alarm Input 1
46	RST	In	Reset Pulse
47	—	—	Not Used
48	VDD	In	+5V DC Power

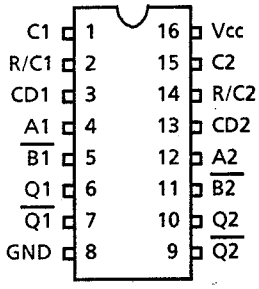
• Block Diagram and Truth Table of ICs

IC101, 102 (WJ-SQ208)
IC101, 102, 103, 104, 105 (WJ-SQ308)
MC74HC4066N



On/Off Control Input	State of Analog Switch
L	OFF
H	ON

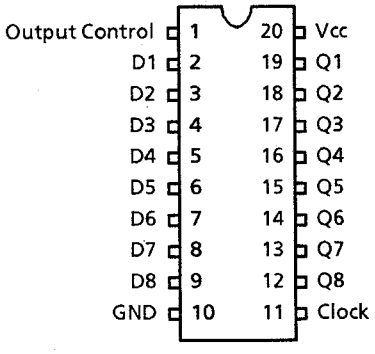
IC5 (WJ-SQ208)
HD74HC4538BP



Inputs			Output	
C_D	A	$\overline{B}$	Q	$\overline{Q}$
L	X	X	L	H
H	L	↓	⊓	⊔
H	↑	H	⊓	⊔
H	H	↓	Not Triggered	
H	↑	L	Not Triggered	

Note X : "H" or "L"

IC1 (WJ-SQ208)
MC74HC574AN



Inputs			Output
Output Control	Clock	D	Q
L	↑	H	H
L	↑	L	L
L	L	X	no change
H	X	X	Z

Note X : "H" or "L"
Z : High Impedance

DISASSEMBLING PROCEDURE

- Remove four screws fixing the upper cover and remove the upper cover. (Fig. 1)

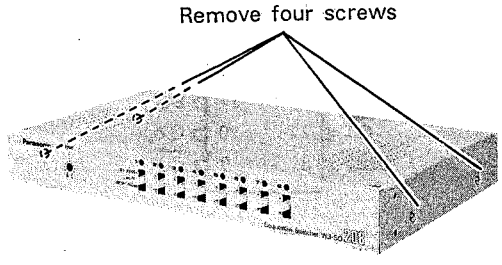


Fig. 1

- Remove four screws fixing the front panel and remove the front Panel. (Fig. 2)

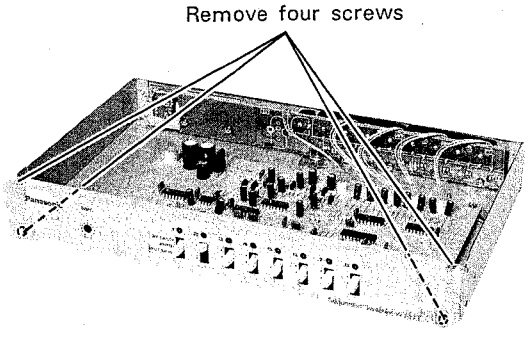


Fig. 2

- Remove two screws on LED BOARD and remove four screws on MAIN BOARD.

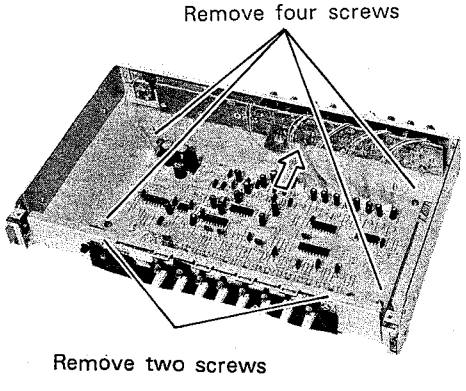


Fig. 3

- Push back MAIN BOARD and remove the board from the chassis. (Fig. 3)
- Remove LED BOARD by passing through the hole on the front chassis and turn over MAIN BOARD as below. (Fig. 4)

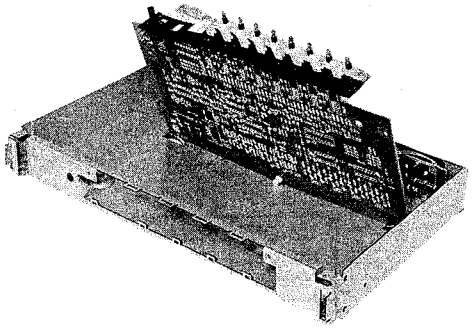
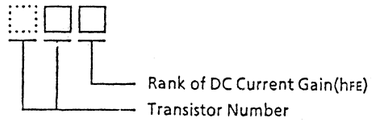


Fig. 4

CHIP COMPONENTS

1. Chip Transistor

The transistor number is indicated on the top surface of the chip transistor using two alphabet letters or one numerical and two alphabet letters.



Transistor Number

(Chip Transistor)

Letter	Transister No.	Letter	Transister No.
A	2SB709	X	2SD602A
B	2SB709A	Y	2SD601
C	2SB710	Z	2SD601A
D	2SB710A	1A	2SB799
E	2SA1022	1B	2SB814
F	2SA1034	1C	2SB902
H	2SA1035	1F	2SK321
I	2SB792	1K	2SK316
K	2SC2778	1L	2SK247
P	2SD814	1M	2SJ84
Q	2SD813	1N	2SK199
R	2SC2480	1O	2SK198
S	2SC2405	1T	2SC3077
T	2SC2406	1X	2SC2845
U	2SC2404	1Z	2SD1030
V	2SC2295	2B	2SK374
W	2SD602	2C	2SK116

(Small Chip Transistor)

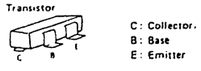
Letter	Transister No.
A	2SB1218
U	2SC3931
W	2SD1820
Y	2SD1819
E3	2SA1226
OS	2SB1219
UC	2SA1532
YU	2SC3938

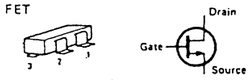
(Pair Transistor)

Letter	Transister No.
5C	XN4601
5N	XN6501
5O	XN6401

Example : WQ ⟶ 2SD602 - Q
YQ ⟶ 2SD601 - Q
1BS ⟶ 2SB814 - S

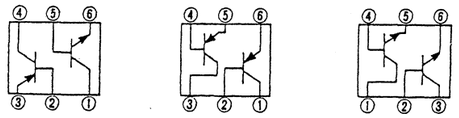
Appearance and Symbols





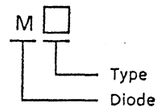
	1	2	3
Except 2SK199	Drain	Source	Gate
2SK199	Gate	Drain	Source

XN4601 XN6401 XN6501



2. Chip Diode

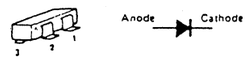
The diode number is indicated on the top surface of the chip diode using Two alphabet letters.



Diode Number

Letter	Diode No.	Letter	Diode No.
MA	MA151A	MI	MA152K
MB	MA152A	MK	MA28W-B
MC	MA153	ML	MA28T-A
MD	MA28-A	MN	MA151WA
ME	MA28-B	MO	MA152WA
MF	MA28W-A	MT	MA151WK
MH	MA151K	MU	MA152WK

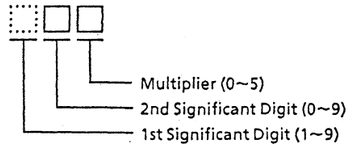
Appearance and Symbols



	1	2	3
MA28/MA28W/MA28T	-	Anode	Cathode
MA151K/MA152K	-	Anode	Cathode
MA151A/MA152A	-	Cathode	Anode
MA151WK/MA152WK	Anode	Anode	Cathode
MA151WA/MA152WA	Cathode	Cathode	Anode
MA153	Cathode	Anode	Common

3. Chip Resistor

The resistor value is indicated on the bottom surface of the chip resistor using three digit numbers.



Example : 330 ⟶ 33 x 10^0 = 33 ohms
561 ⟶ 56 x 10^1 = 560 ohms
123 ⟶ 12 x 10^3 = 12 ohms

Note : Zero ohm resistor (jumper chip) is colored red or green.

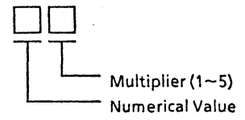
4. Chip Capacitor

The capacitive value of replacement chip capacitors is indicated on the bottom surface. Original parts do not have value indication.

If the capacitive value is less than 100 pF, the value will be indicated by one or two digit number expressing the capacity directly in pF.

Example : 0.5 ⟶ 0.5 pF 2.5 ⟶ 2.5 pF
75 ⟶ 0.75 pF 33 ⟶ 33 pF
1 ⟶ 1 pF 82 ⟶ 82 pF

If the capacitive value is 100 pF or greater, the value will be indicated by an alpha-numeric code. The letter precedes the number and expresses a numerical value to be multiplied by the number which follows.



Numerical Value

Letter	Value	Letter	Value
A	10	N	33
B	11	P	36
C	12	O	39
D	13	R	43
E	15	S	47
F	16	T	51
G	18	U	56
H	20	V	62
J	22	W	68
K	24	X	75
L	27	Y	82
M	30	Z	91

*Letters I and O are not used

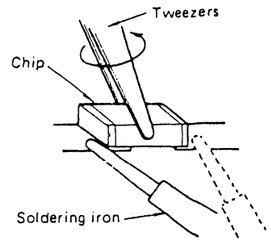
Example : A1 ⟶ 10 x 10^1 = 100 pF
N2 ⟶ 33 x 10^2 = 3300 pF
S3 ⟶ 47 x 10^3 = 47000 pF

5. Precautions in replacing the chip component

1. Make sure that the unit is turned OFF when replacing the chip.
2. Use tweezers to prevent any damage to the chip surface.
3. Do not re-use the chips after removal.
4. Do not rub the electrode of chips.
5. Do not subject the chips to excessive stress.
6. It is recommended that a pencil-type soldering iron to be used.
7. The solder whose diameter is less than 0.5 mm is recommended.
8. Do not heat the chip beyond 3 seconds.
9. Maintain temperature control under 260°C (500°F) when soldering.

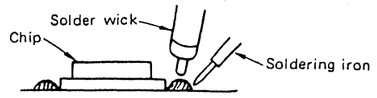
5-1 Removal (Transistor, Diode, Resistor and Capacitor)

1. Add the solder to both ends of the chip (three leads for chip transistor).
2. While attaching the soldering iron to both ends of the chip (three leads for chip transistor) as shown below, remove the chip by turning it with tweezers.
   Note : Be careful not to damage other chips.

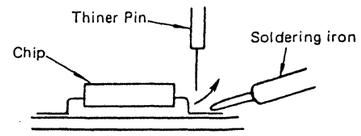


5-2 Removal (IC)

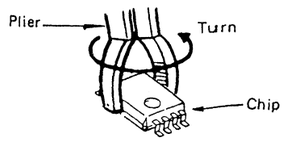
1. Add the solder wick and solder iron to each lead of the IC and remove solder.



2. Add the solder iron to each lead of the IC and left each lead of the IC using thiner pin.

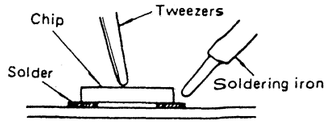


3. Remove IC turning it with plier.

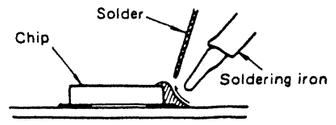


5-3 Mounting

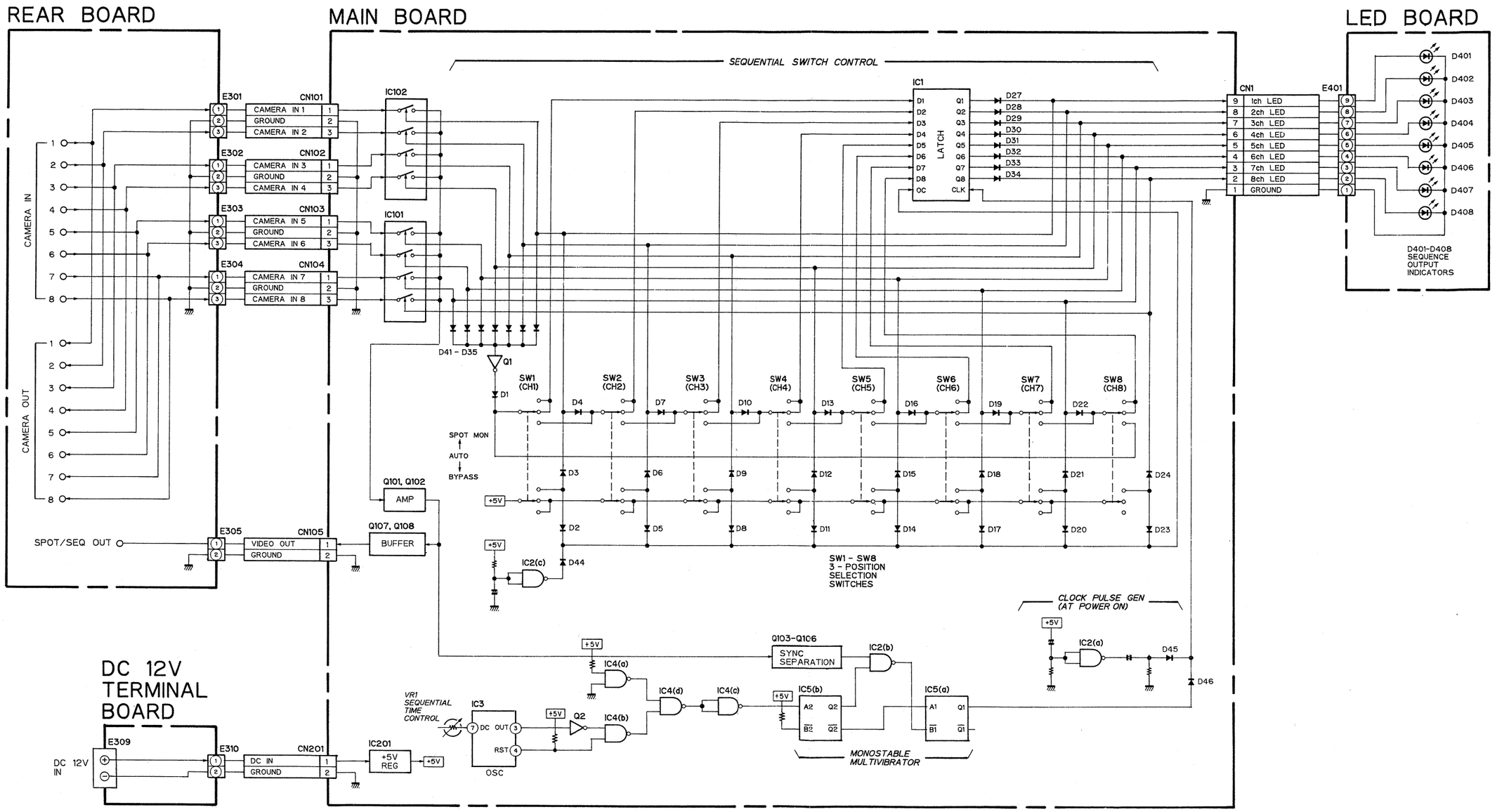
1. Place the solder thinly on the chip mounting foil.
2. Solder the chip temporarily while holding the chip with the tweezers.



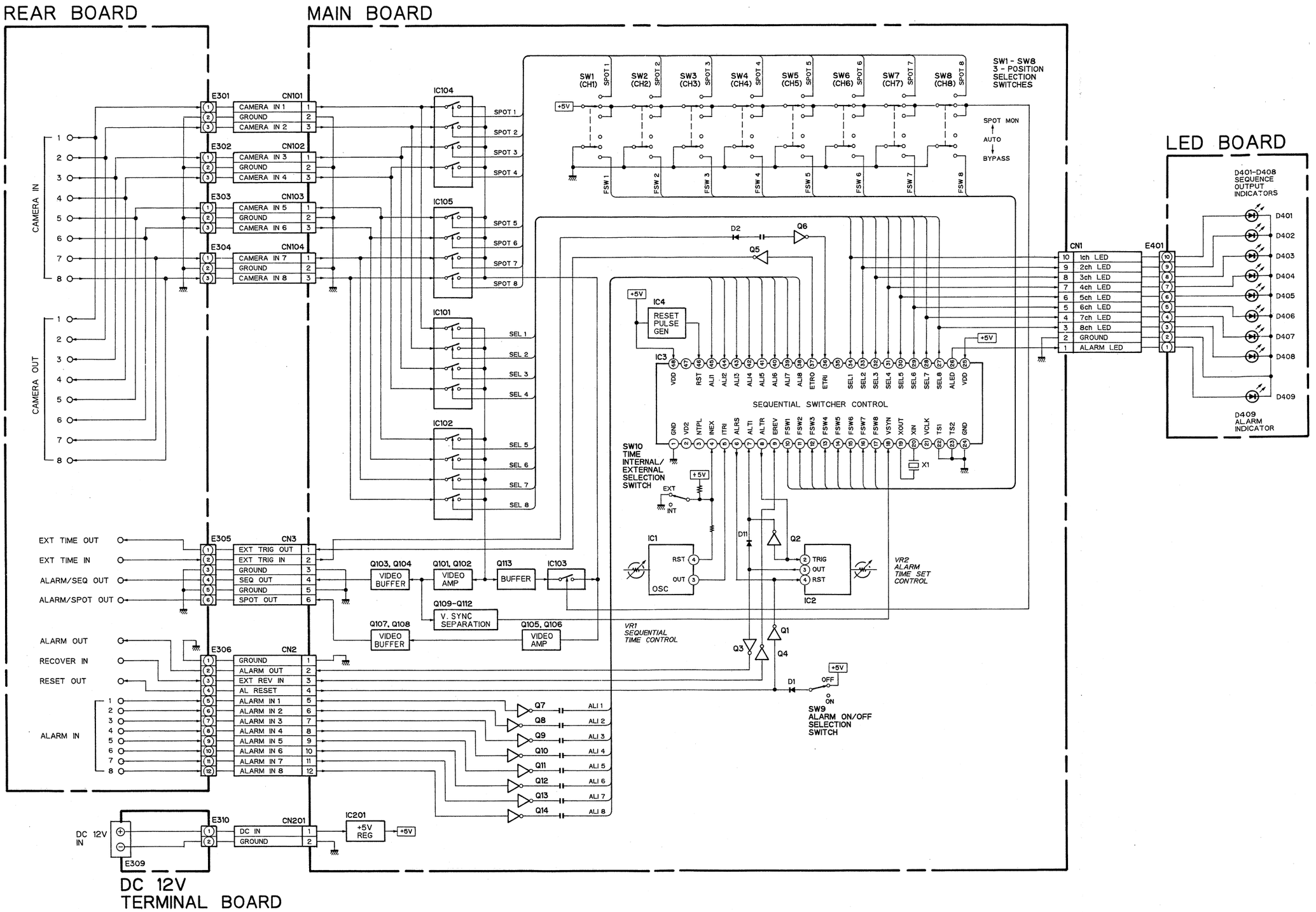
3. Solder both ends of chip (three lea ds for chip transistor).



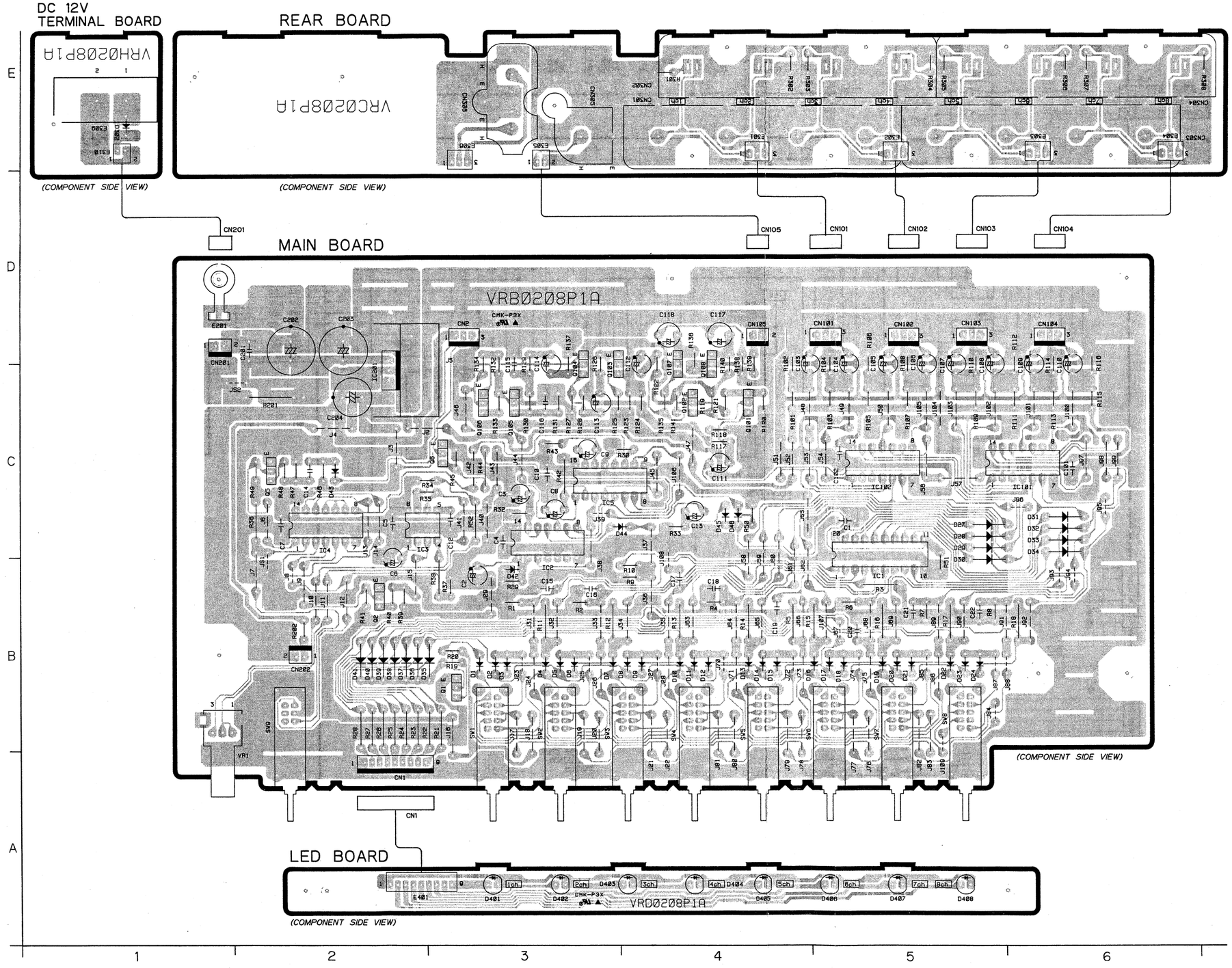
BLOCK DIAGRAM OF WJ-SQ208



BLOCK DIAGRAM OF WJ-SQ308



CONDUCTOR VIEW OF WJ-SQ208



<Index>

MAIN BOARD

IC1	C5
IC2	C3
IC3	C2
IC4	C2
IC5	C3
IC101	C6
IC102	C5
IC201	C2
Q1	B3
Q2	B2
Q101	C4
Q102	C4
Q103	C3
Q104	C3
Q105	C3
Q106	C3
Q107	C4
Q108	C4
D1	B3
D2	B3
D3	B3
D4	B3
D5	B3
D6	B3
D7	B3
D8	B4
D9	B4
D10	B4
D11	B4
D12	B4
D13	B4
D14	B4
D15	B4
D16	B5
D17	B5
D18	B5
D19	B5
D20	B5
D21	B5
D22	B5
D23	B5
D24	B5
D27	C5
D28	C5
D29	C5
D30	C5
D31	C6
D32	C6
D33	C6
D34	C6
D35	B3
D36	B2
D37	B2
D38	B2
D39	B2
D40	B2
D41	B2
D42	B3
D44	C4
D45	C4
D46	C4

<Index>

LED BOARD

D401	A3
D402	A3
D403	A4
D404	A4
D405	A4
D406	A5
D407	A5
D408	A5

DC12V TERMINAL BOARD

D302	E1

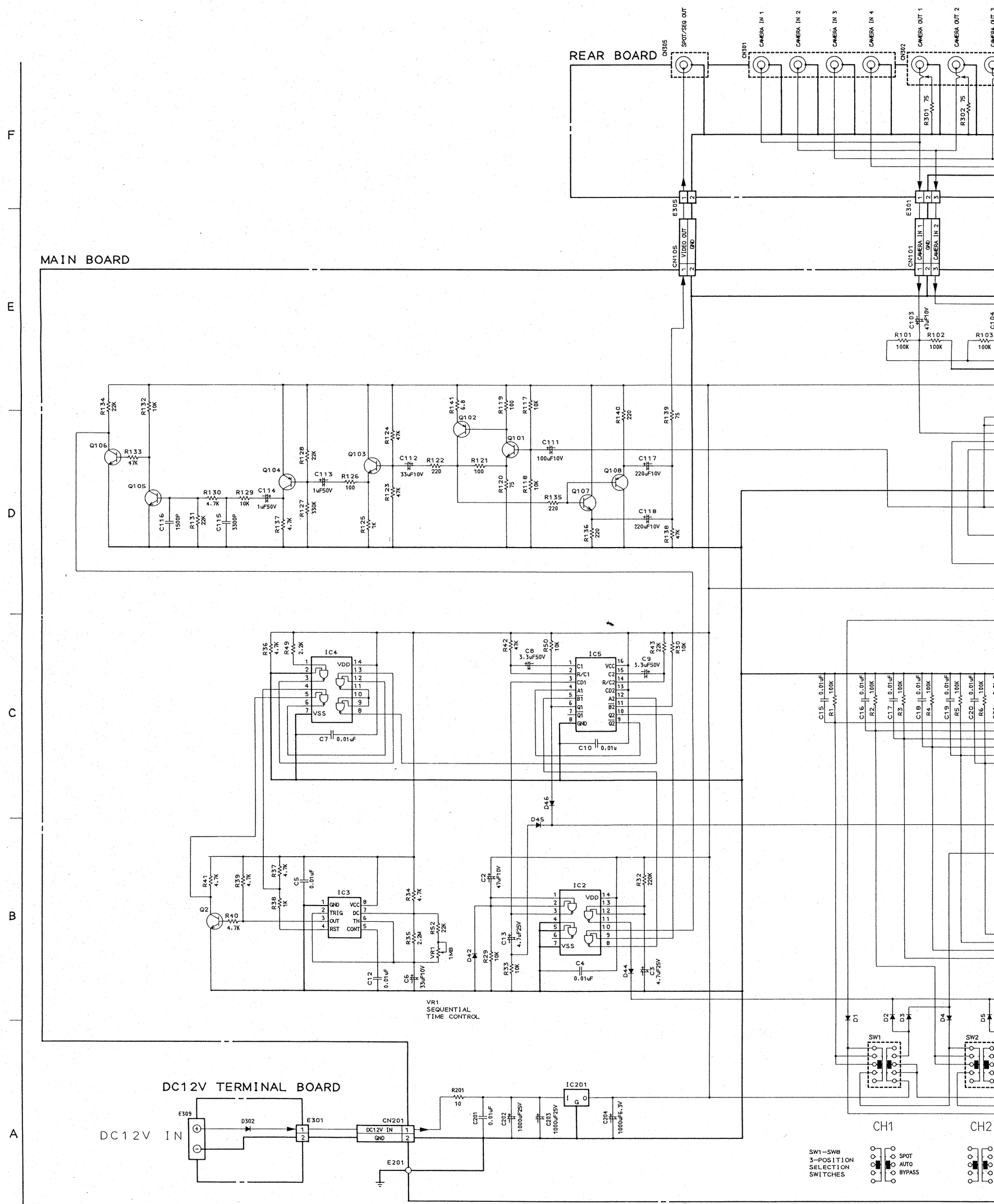
<Voltages>

	IC1	IC2	IC3	IC4	IC5	IC101	IC102
Pin 1	4.6	0	0	0.1	0	2.5	2.5
2	0	0	-	0	5.0	2.5	2.5
3	3.6	5.0	-	5.0	5.0	2.5	2.5
4	0	0	5.0	5.0	5.0	2.5	2.5
5	0	0	3.4	5.0	5.0	0	4.3
6	0	5.0	-	-	0.1	0	0
7	0	0	-	0	5.0	0	0
8	0	5.0	5.0	-	0	2.5	2.5
9	0	0		-	5.0	2.5	2.5
10	0	0.1		-	0	2.5	2.5
11	0.1	0		-	5.0	2.5	2.5
12	0	4.9		-	-	0	0
13	0	4.9		5.0	5.0	0	0
14	0	5.0		5.0	-	5.0	5.0
15	0				0		
16	0				5.0		
17	0						
18	0						
19	0.1						
20	5.0						

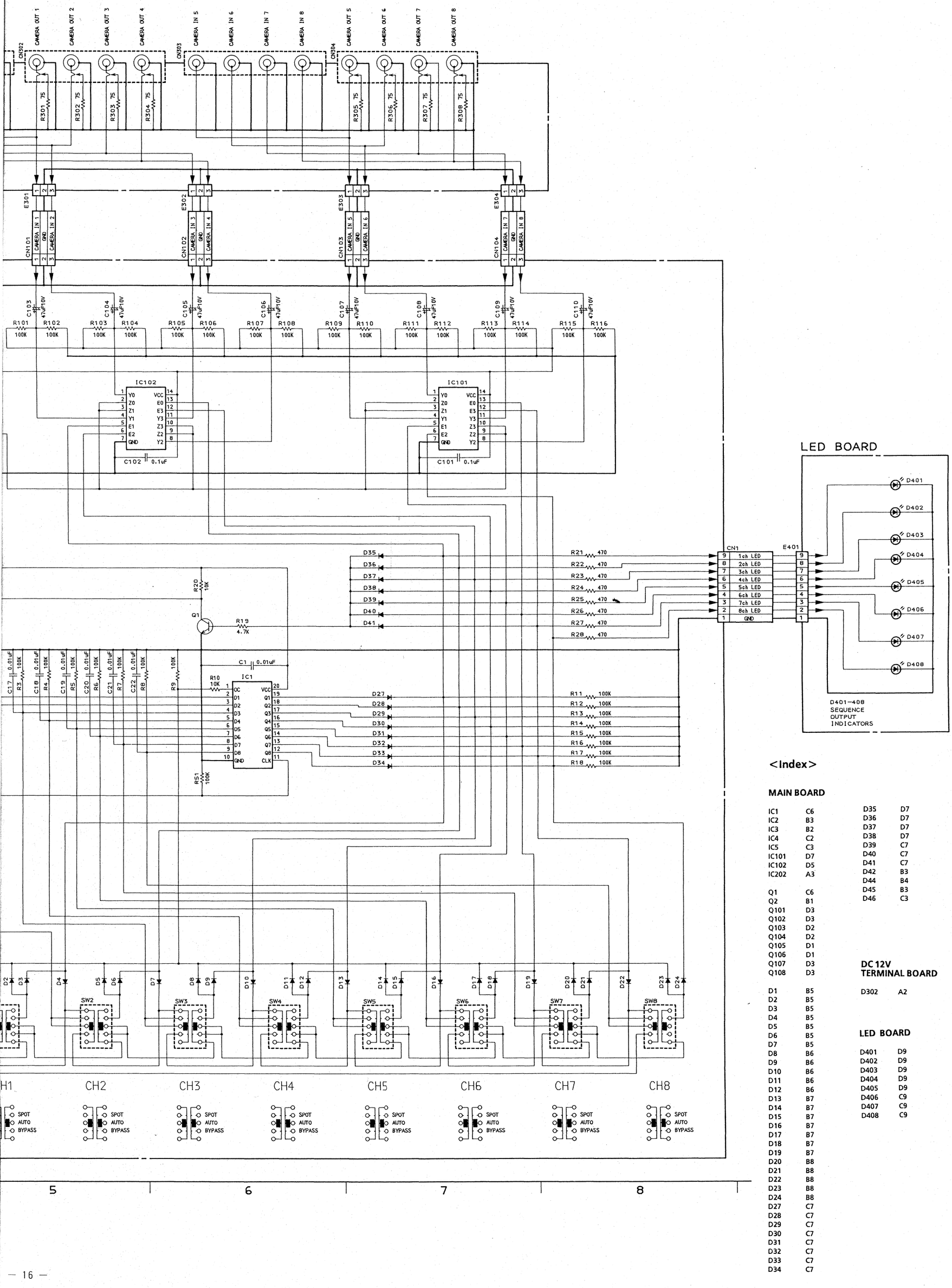
	I	G	O
IC201	12.0	0	5.0

	B	C	E
Q1	0.7	0	0
2	0.5	5.0	0
101	2.4	4.2	1.7
102	4.2	3.1	4.9
103	2.4	5.0	1.7
104	4.7	0.1	5.0
105	0	4.3	0
106	0.6	0	0
107	3.1	5.0	2.4
108	3.1	0	3.8

* Voltages are measured on Condution where SW1 is positioned at spot


REAR BOARD
MAIN BOARD
CN305 SPOT/SEQ OUT
CN301 CAMERA IN 1
CAMERA IN 2
CAMERA IN 3
CAMERA IN 4
CN302 CAMERA OUT 1
CAMERA OUT 2
R301 75
R302 75
E305
E301
CN105 VIDEO OUT GND
CN101 CAMERA IN 1 GND CAMERA IN 2
C103 47uF10V
R101 100K
R102 100K
R103 100K
Q106 Q105 Q104 Q103 Q102 Q101 Q108 Q107 Q2
R134 22K
R132 10K
R133 47K
R130 4.7K
R129 10K
C114 1uF50V
C116 1500P
R131 22K
C115 3300P
R137 4.7K
R128 22K
C113 1uF50V
R126 100
R127 330K
R125 1K
R124 47K
R123 47K
C112 33uF10V
R122 220
R121 100
R141 6.8
R119 100
R117 10K
R120 75
R118 10K
C111 100uF10V
R135 220
R136 220
R140 220
R139 75
C117 220uF10V
C118 220uF10V
R138 47K
R36 4.7K
R49 2.2K
IC4 VDD VSS
C7 0.01uF
R42 47K
C8 3.3uF50V
R50 10K
IC5 VCC GND
C9 3.3uF50V
R43 22K
R30 10K
C10 0.01u
D46
D45
R41 4.7K
R39 4.7K
R37 4.7K
C5 0.01uF
R38 1K
IC3 GND TRIG OUT RST VCC DC TH CONT
R40 4.7K
R34 4.7K
R35 2.2K
R52 22K
VR1 1MB
C12 0.01uF
C6 33uF10V
D42
R29 10K
R33 10K
C13 4.7uF25V
C2 47uF10V
IC2 VDD VSS
C4 0.01uF
R32 220K
D44
C3 4.7uF25V
VR1
SEQUENTIAL
TIME CONTROL
C15 0.01uF R1 100K
C16 0.01uF R2 100K
C17 0.01uF R3 100K
C18 0.01uF R4 100K
C19 0.01uF R5 100K
C20 0.01uF R6 100K
D1 D2 D3 D4 D5
SW1 SW2
CH1 CH2
SW1–SW8
3–POSITION
SELECTION
SWITCHES
SPOT
AUTO
BYPASS
DC12V TERMINAL BOARD
DC12V IN
E309
D302
E301
CN201 DC12V IN GND
R201 10
C201 0.01uF
C202 1000uF25V
C203 1000uF25V
IC201 I G O
C204 1000uF6.3V
E201

TIC DIAGRAM OF WJ-SQ208



<Index>

MAIN BOARD

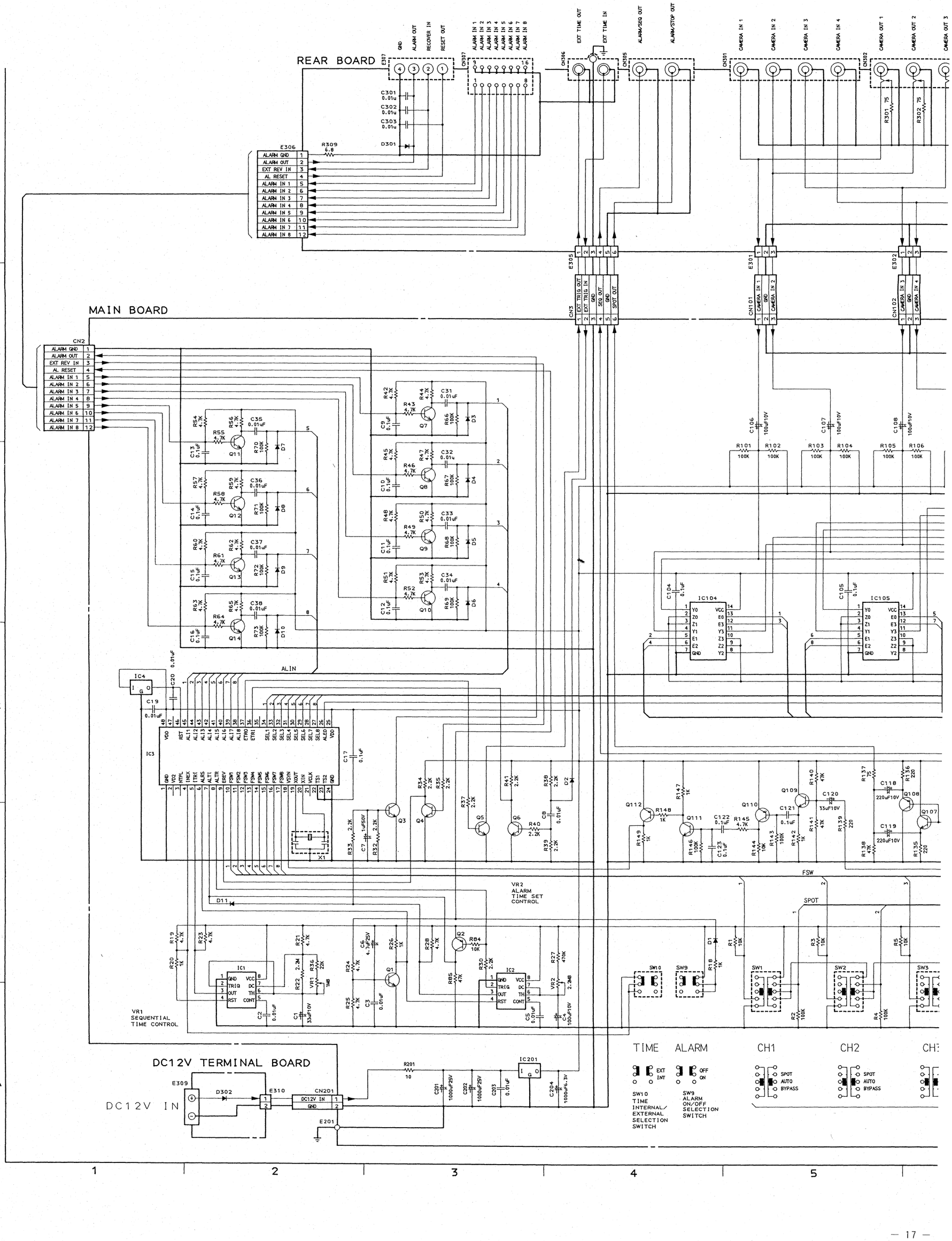
IC1	C6	D35	D7
IC2	B3	D36	D7
IC3	B2	D37	D7
IC4	C2	D38	D7
IC5	C3	D39	C7
IC101	D7	D40	C7
IC102	D5	D41	C7
IC202	A3	D42	B3
		D44	B4
Q1	C6	D45	B3
Q2	B1	D46	C3
Q101	D3		
Q102	D3		
Q103	D2		
Q104	D2		
Q105	D1		
Q106	D1		
Q107	D3		
Q108	D3		
D1	B5		
D2	B5		
D3	B5		
D4	B5		
D5	B5		
D6	B5		
D7	B5		
D8	B6		
D9	B6		
D10	B6		
D11	B6		
D12	B6		
D13	B7		
D14	B7		
D15	B7		
D16	B7		
D17	B7		
D18	B7		
D19	B7		
D20	B8		
D21	B8		
D22	B8		
D23	B8		
D24	B8		
D27	C7		
D28	C7		
D29	C7		
D30	C7		
D31	C7		
D32	C7		
D33	C7		
D34	C7		

DC 12V TERMINAL BOARD

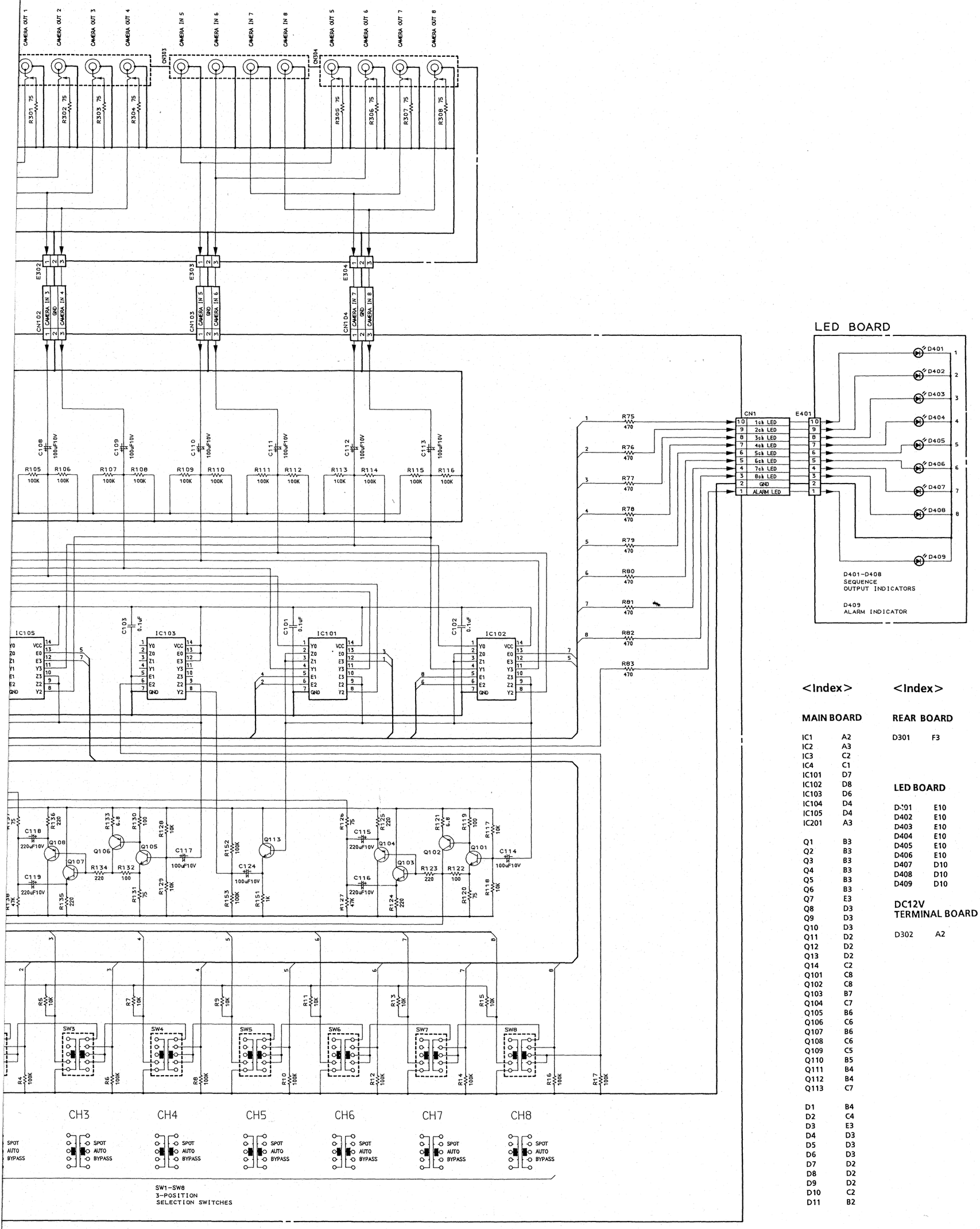
D302	A2

LED BOARD

D401	D9
D402	D9
D403	D9
D404	D9
D405	D9
D406	C9
D407	C9
D408	C9


REAR BOARD
E307
GND
ALARM OUT
RECOVER IN
RESET OUT
CN307
ALARM IN 1
ALARM IN 2
ALARM IN 3
ALARM IN 4
ALARM IN 5
ALARM IN 6
ALARM IN 7
ALARM IN 8
CN306
EXT TIME OUT
EXT TIME IN
CN305
ALARM/SEQ OUT
ALARM/STOP OUT
CN301
CAMERA IN 1
CAMERA IN 2
CAMERA IN 3
CAMERA IN 4
CN302
CAMERA OUT 1
CAMERA OUT 2
CAMERA OUT 3
C301 0.01u
C302 0.01u
C303 0.01u
D301
R301 75
R302 75
E306
ALARM GND 1
ALARM OUT 2
EXT REV IN 3
AL RESET 4
ALARM IN 1 5
ALARM IN 2 6
ALARM IN 3 7
ALARM IN 4 8
ALARM IN 5 9
ALARM IN 6 10
ALARM IN 7 11
ALARM IN 8 12
R309 6.8
E305
CN3
EXT TRIG OUT
EXT TRIG IN
GND
SEQ OUT
GND
SPOT OUT
E301
CN101
CAMERA IN 1
GND
CAMERA IN 2
E302
CN102
CAMERA IN 3
GND
CAMERA IN 4
MAIN BOARD
CN2
ALARM GND 1
ALARM OUT 2
EXT REV IN 3
AL RESET 4
ALARM IN 1 5
ALARM IN 2 6
ALARM IN 3 7
ALARM IN 4 8
ALARM IN 5 9
ALARM IN 6 10
ALARM IN 7 11
ALARM IN 8 12
R54 4.7K
R55 4.7K
R56 4.7K
C35 0.01uF
C13 0.1uF
Q11
R70 100K
D7
R57 4.7K
R58 4.7K
R59 4.7K
C36 0.01uF
C14 0.1uF
Q12
R71 100K
D8
R60 4.7K
R61 4.7K
R62 4.7K
C37 0.01uF
C15 0.1uF
Q13
R72 100K
D9
R63 4.7K
R64 4.7K
R65 4.7K
C38 0.01uF
C16 0.1uF
Q14
R73 100K
D10
R42 4.7K
R43 4.7K
R44 4.7K
C31 0.01uF
C9 0.1uF
Q7
R66 100K
D3
R45 4.7K
R46 4.7K
R47 4.7K
C32 0.01uF
C10 0.1uF
Q8
R67 100K
D4
R48 4.7K
R49 4.7K
R50 4.7K
C33 0.01uF
C11 0.1uF
Q9
R68 100K
D5
R51 4.7K
R52 4.7K
R53 4.7K
C34 0.01uF
C12 0.1uF
Q10
R69 100K
D6
ALIN
IC4
C20 0.01uF
C19 0.01uF
IC3
C17 0.1uF
X1
R34 2.2K
R35 2.2K
R37 2.2K
R41 2.2K
R38 2.2K
D2
R33 2.2K
C7 1uF50V
R32 2.2K
Q3
Q4
Q5
Q6
C8 0.01uF
R40 2.2K
R39 2.2K
D11
VR2
ALARM
TIME SET
CONTROL
R19 4.7K
R23 4.7K
R20 1K
IC1
R21 4.7K
2.2M
R36 22K
R22
VR1 1MB
C6 4.7uF25V
R26 1K
R24 4.7K
R25 4.7K
C3 0.01uF
C1 330uF10V
C2 0.01uF
Q1
R28 4.7K
Q2
R84 10K
R85 47K
R30 2.2K
IC2
R27 470K
VR2 2.2MB
C5 0.01uF
C4 100uF10V
VR1
SEQUENTIAL
TIME CONTROL
FSW
SPOT
SW10
SW9
D1
R18 1K
R1 10K
R3 10K
R5 10K
SW1
SW2
SW3
R2 100K
R4 100K
C106 100uF10V
C107 100uF10V
C108 100uF10V
R101 100K
R102 100K
R103 100K
R104 100K
R105 100K
R106 100K
C104 0.1uF
IC104
C105 0.1uF
IC105
Q112
R148 1K
Q111
R147 1K
C122 0.1uF
R145 4.7K
Q110
C121 0.1uF
Q109
R140 47K
C120 33uF10V
Q108
C118 220uF10V
R137 33
R136 220
Q107
C119 220uF10V
R149 1K
R146 10K
C123 0.1uF
R144 1K
R143 100K
R142 1K
R141 47K
R139 220
R138 4.7K
R135 220
DC12V TERMINAL BOARD
DC12V IN
E309
D302
E310
CN201
DC12V IN 1
GND 2
R201 10
IC201
C201 1000uF25V
C202 1000uF25V
C203 0.01uF
C204 1000uF6.3V
E201
TIME
ALARM
EXT
INT
OFF
ON
SW10
TIME
INTERNAL/
EXTERNAL
SELECTION
SWITCH
SW9
ALARM
ON/OFF
SELECTION
SWITCH
CH1
CH2
SPOT
AUTO
BYPASS

TIC DIAGRAM OF WJ-SQ308



<Index>

MAIN BOARD

IC1	A2
IC2	A3
IC3	C2
IC4	C1
IC101	D7
IC102	D8
IC103	D6
IC104	D4
IC105	D4
IC201	A3
Q1	B3
Q2	B3
Q3	B3
Q4	B3
Q5	B3
Q6	B3
Q7	E3
Q8	D3
Q9	D3
Q10	D3
Q11	D2
Q12	D2
Q13	D2
Q14	C2
Q101	C8
Q102	C8
Q103	B7
Q104	C7
Q105	B6
Q106	C6
Q107	B6
Q108	C6
Q109	C5
Q110	B5
Q111	B4
Q112	B4
Q113	C7
D1	B4
D2	C4
D3	E3
D4	D3
D5	D3
D6	D3
D7	D2
D8	D2
D9	D2
D10	C2
D11	B2

<Index>

REAR BOARD

D301	F3

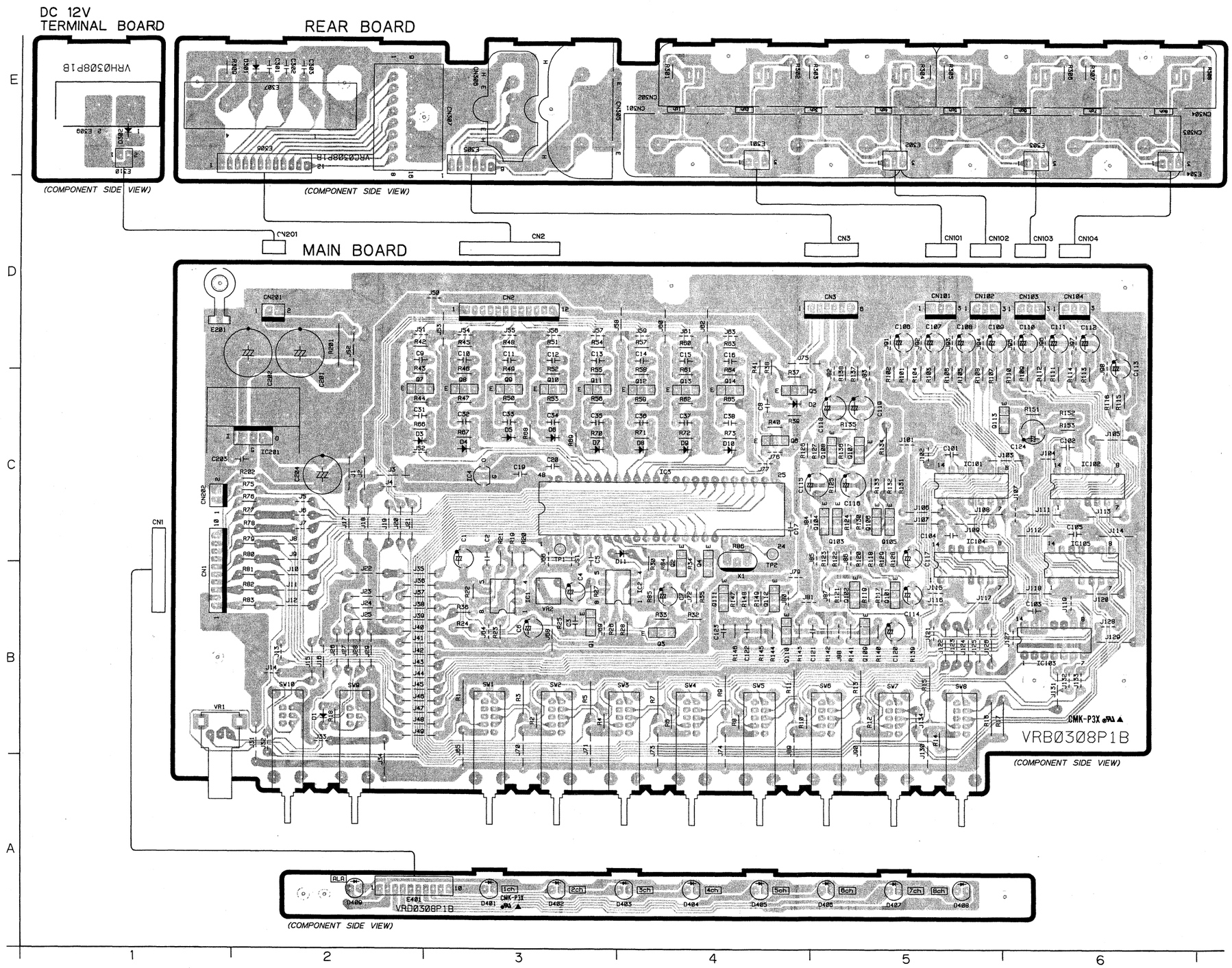
LED BOARD

D401	E10
D402	E10
D403	E10
D404	E10
D405	E10
D406	E10
D407	D10
D408	D10
D409	D10

DC12V TERMINAL BOARD

D302	A2

CONDUCTOR VIEW OF WJ-SQ308



<Index> <Voltages>

MAIN BOARD

IC1	B3
IC2	B4
IC3	C4
IC4	C3
IC101	C5
IC102	C6
IC103	B6
IC104	C5
IC105	C6
IC201	C2
Q1	B3
Q2	C4
Q3	C4
Q4	C4
Q5	C4
Q6	C4
Q7	C2
Q8	C3
Q9	C3
Q10	C3
Q11	C3
Q12	C4
Q13	C4
Q14	C4
Q101	B5
Q102	B5
Q103	C5
Q104	C5
Q105	C5
Q106	C5
Q107	C5
Q108	C5
Q109	B5
Q110	B4
Q111	B4
Q112	B4
Q113	C5
D1	B2
D2	C4
D3	C2
D4	C3
D5	C3
D6	C3
D7	C3
D8	C4
D9	C4
D10	C4
D11	C4

REAR BOARD

D301	E2

DC12V TERMINAL BOARD

D302	E1

LED BOARD

D401	A3
D402	A3
D403	A4
D404	A4
D405	A4
D406	A5
D407	A5
D408	A5
D409	A2

	B	C	E
Q1	0	5.0	0
2	4.3	3.7	5.0
3	0.7	0	0
4	0.1	5.0	0
5	0.7	0	0
6	0	5.0	0
7	0	5.0	0
8	0.7	0.1	0
9	0.7	0.1	0
10	0.7	0.1	0
11	0.7	0.1	0
12	0.7	0.1	0
13	0.7	0.1	0
14	0.7	0.1	0
101	2.4	4.2	1.7
102	4.1	3.2	4.9
103	3.1	5.0	2.4
104	3.1	0	3.8
105	2.4	4.2	1.7
106	4.2	0.1	4.9
107	3.2	5.0	2.5
108	3.2	0	3.8
109	2.3	5.0	1.7
110	4.4	0.1	5.0
111	0	5.0	0
112	5.0	0	5.0
113	2.4	5.0	1.7

	IC3
Pin 1	0
2	0
3	5.0
4	5.0
5	-
6	5.0
7	3.7
8	5.0
9	5.0
10	5.0
11	5.0
12	5.0
13	5.0
14	5.0
15	5.0
16	5.0
17	5.0
18	0
19	2.5
20	2.2
21	2.5
22	0
23	0
24	0

	IC3
Pin 25	5.0
26	-
27	0
28	0
29	0
30	0
31	0
32	0
33	0
34	5.0
35	0
36	5.0
37	-
38	0
39	0
40	0
41	0
42	0
43	0
44	0
45	0
46	5.0
47	0
48	5.0

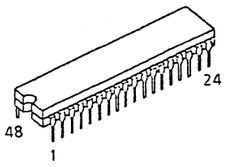
	IC1	IC2	IC101	IC102	IC103	IC104	IC105
Pin 1	0	0	2.5	2.5	0.1	2.2	2.5
2	-	5.0	2.2	2.2	0.1	2.5	2.5
3	-	3.7	2.2	2.2	0.1	2.5	2.5
4	5.0	5.0	2.5	2.5	0.1	2.5	2.5
5	3.3	3.3	0	0	0	0	0
6	-	1.4	0	0	5.0	0	0
7	-	1.3	0	0	0	0	0
8	5.0	5.0	2.5	2.5	2.5	2.5	2.5
9			2.2	2.2	2.5	2.5	2.5
10			2.2	2.2	0.6	2.5	2.5
11			2.2	2.5	0.6	2.5	2.5
12			5.0	0	5.0	0	0
13			0	0	5.0	0	0
14			5.0	5.0	5.0	5.0	5.0

	I	G	O
IC201	12.0	0	5.0
4	5.0	0	5.0

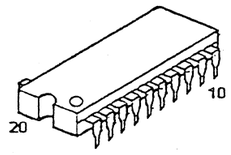
*Voltages are measured on condition as follows.
SW9 : ON Position
Alarm Input 1 : ON

APPEARANCE OF IC, TRANSISTOR AND DIODE

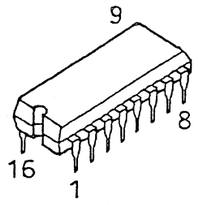
UPD65006CA16



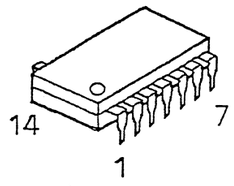
MC74HC574AN



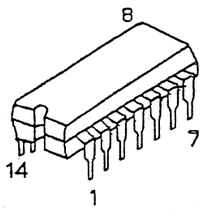
HD74HC4538BP



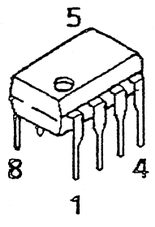
MC74HC4066N



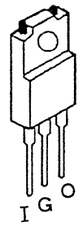
YWHD74HC00P



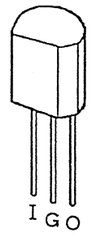
YWNJM555D



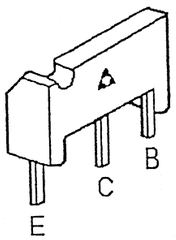
YWNJM78M05FA



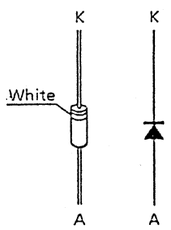
M51951ASL



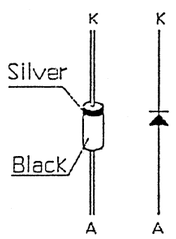
2SA1254-BC
2SB642-QRS
2SD637-RS



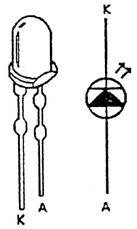
MA165



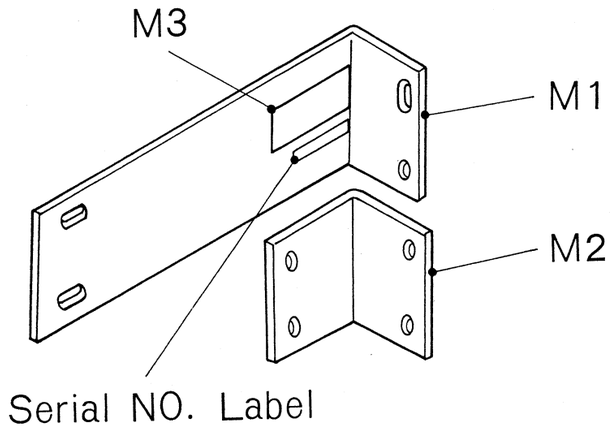
YWERA1501

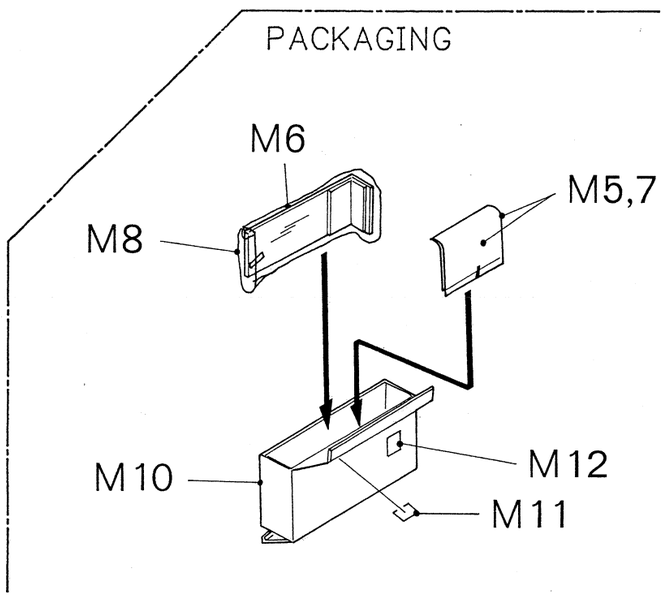


LN29RD



EXPLODED VIEW OF WV-Q61

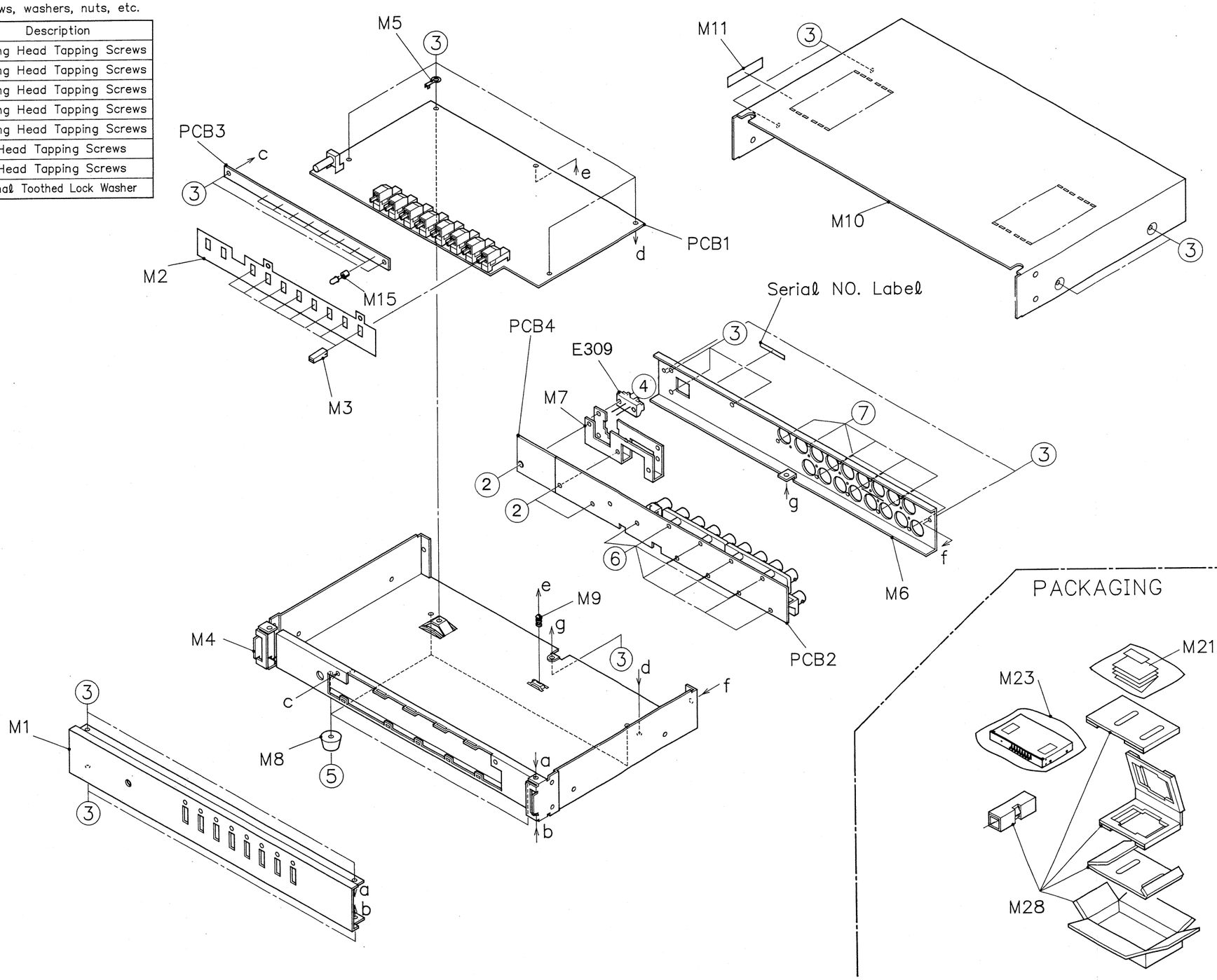




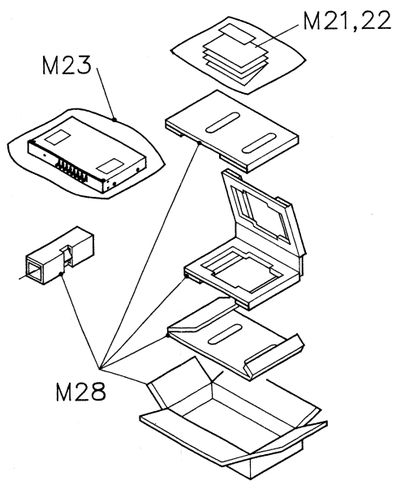
EXPLODED VIEW OF WJ-SQ208

◯ Numbers show screws, washers, nuts, etc.

No.	Screws	Description
①	XTB2+5AFX	Binding Head Tapping Screws
②	XTB3+6FFX	Binding Head Tapping Screws
③	XTB3+6FFN	Binding Head Tapping Screws
④	XTB3+12FFN	Binding Head Tapping Screws
⑤	XTB3+12FFX	Binding Head Tapping Screws
⑥	XTN3+6CFX	Pan Head Tapping Screws
⑦	NTN3+8CFN	Pan Head Tapping Screws
⑧	XWC3BFN	External Toothed Lock Washer



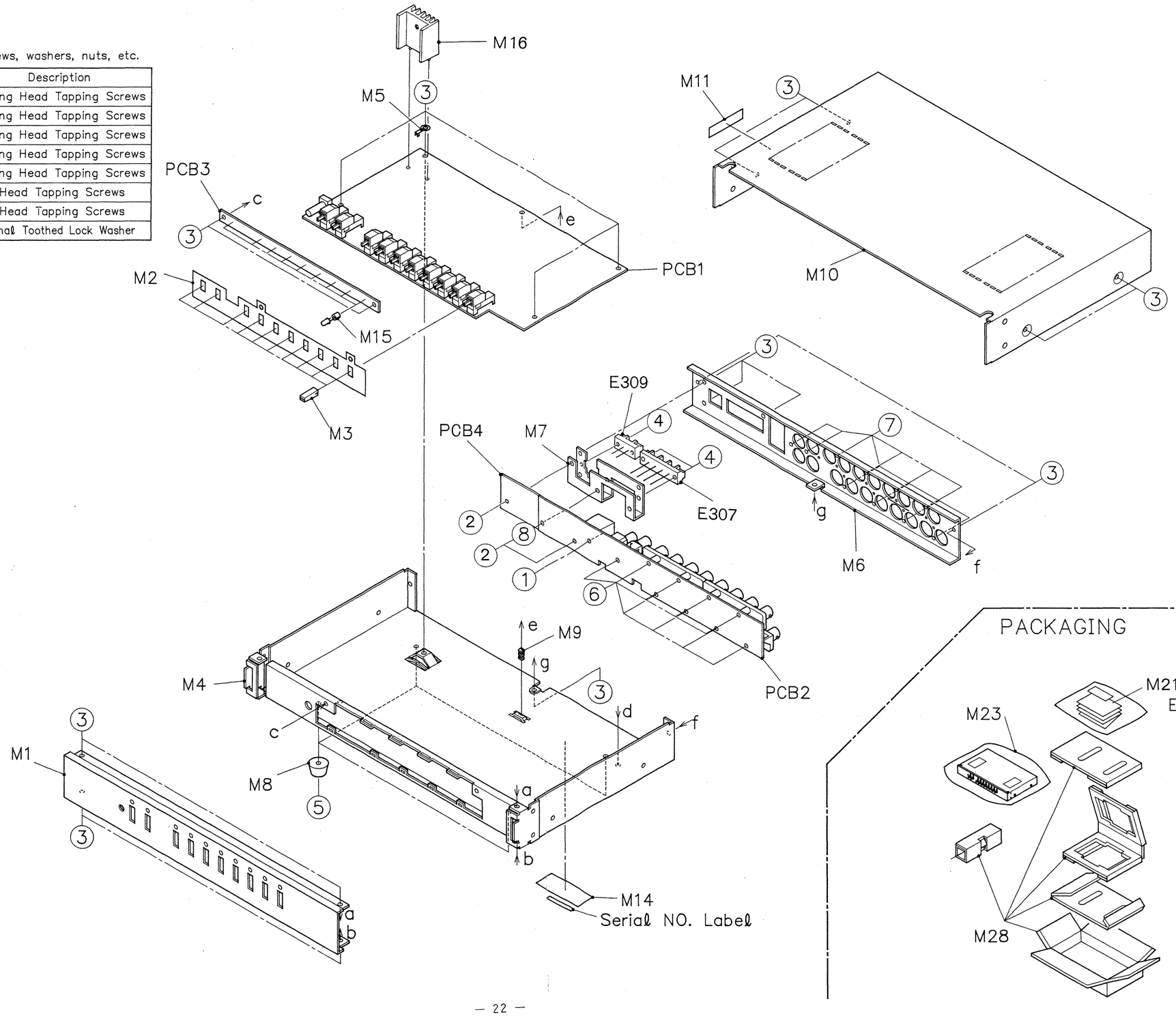
PACKAGING



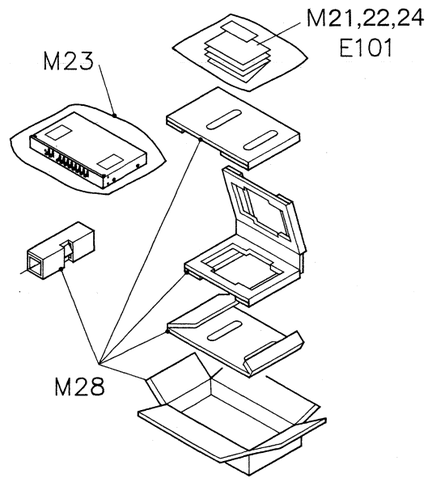
EXPLODED VIEW OF WJ-SQ308

◯ Numbers show screws, washers, nuts, etc.

No.	Screws	Description
①	XTB2+5AFX	Binding Head Tapping Screws
②	XTB3+6FFX	Binding Head Tapping Screws
③	XTB3+6FFN	Binding Head Tapping Screws
④	XTB3+12FFN	Binding Head Tapping Screws
⑤	XTB3+12FFX	Binding Head Tapping Screws
⑥	XTN3+6CFX	Pan Head Tapping Screws
⑦	NTN3+8CFN	Pan Head Tapping Screws
⑧	XWC3BFN	External Toothed Lock Washer



PACKAGING



REPLACEMENT PARTS LIST

Important Notice

1. Components identified by "<!>" mark have special characteristics important for safety.
   When replacing any of these components, use only manufacturer's specified parts.
2. RTL : Retention Time Limited,

REF.NO.	PART NO.	DESCRIPTION
RACK ANGLE BRACKET WV-Q61		
MISCELLANEOUS		
M1	YWV5PA0099A4	Rack Components
M2	YWA2SB1036A4	Mounting Angle
M3	YWV7QA3133A4	Main Label
ACCESSORY PARTS/PACKAGING PARTS		
M5	YWV8QA3184AN	Operating Instructions
M6	YWT050803	Polyethylene Bag
M7	YWT15X20C03	Polyethylene Bag
M8	YWT20X25C03	Polyethylene Bag
M10	YWV9CA2131AN	Packaging Assy
M11	YWA8FA0205A4	Packaging Label
M12	YWV8FA0177A4	Packaging Label
SEQUENTIAL SWITCHER WJ-SQ208		
MISCELLANEOUS		
M1	YWV5WB1535A2	Front Panel
M2	YWV3AA0156A3	Dust Proof Parts
M3	YWV5RA0398A4	Switch Knob
M4	YWV2KA0850A1	Main Chassis
M6	YWV5WB1569A2	Rear Panel
M8	YWV5350WB01	Rubber Foot
M9	YWMPS06	Support
M10	YWV5EA1300A2	Upper Cover
M11	YFV7MB0099A4	Safety Label

REF.NO.	PART NO.	DESCRIPTION	
MAIN BOARD			
PCB1 (RTL)	YWVKB0208E1A	Printed Circuit Board Assy	
IC1	YWMC74HC574N	IC	
IC2	YWHD74HC00P	IC	
IC3	YWNJM555D	IC	
IC4	YWHD74HC00P	IC	
IC5	HD74HC4538BP	IC	
IC101,102	MC74HC4066N	IC	
IC201	YWNJM78M05FA	IC	
Q1,2	2SD637-RS	Transistor	
Q101	2SD637-RS	Transistor	
Q102	2SB642-QRS	Transistor	
Q103	2SD637-RS	Transistor	
Q104	2SB642-QRS	Transistor	
Q105-107	2SD637-RS	Transistor	
Q108	2SB642-QRS	Transistor	
D1-24	MA165	Diode	
D27-42	MA165	Diode	
D44-46	MA165	Diode	
R1-9	ERDS2TJ104	Carbon	100K ohms 1/4W
R10	ERDS2TJ103	Carbon	10K ohms 1/4W
R11-18	ERDS2TJ104	Carbon	100K ohms 1/4W
R19	ERDS2TJ472	Carbon	4.7K ohms 1/4W
R20	ERDS2TJ103	Carbon	10K ohms 1/4W
R21-28	ERDS2TJ471	Carbon	470 ohms 1/4W
R29,30	ERDS2TJ103	Carbon	10K ohms 1/4W
R32	ERDS2TJ224	Carbon	220K ohms 1/4W
R33	ERDS2TJ103	Carbon	10K ohms 1/4W
R34	ERDS2TJ472	Carbon	4.7K ohms 1/4W
R35	ERDS2TJ225	Carbon	2.2M ohms 1/4W
R36,37	ERDS2TJ472	Carbon	4.7K ohms 1/4W
R38	ERDS2TJ102	Carbon	1K ohms 1/4W
R39-41	ERDS2TJ472	Carbon	4.7K ohms 1/4W
R42	ERDS2TJ473	Carbon	47K ohms 1/4W
R43	ERDS2TJ223	Carbon	22K ohms 1/4W
R49	ERDS2TJ222	Carbon	2.2K ohms 1/4W
R50	ERDS2TJ103	Carbon	10K ohms 1/4W
R51	ERDS2TJ104	Carbon	100K ohms 1/4W
R52	ERDS2TJ223	Carbon	22K ohms 1/4W
R101-116	ERDS2TJ104	Carbon	100K ohms 1/4W
R117,118	ERDS2TJ103	Carbon	10K ohms 1/4W
R119	ERDS2TJ101	Carbon	100 ohms 1/4W

REF.NO.	PART NO.	DESCRIPTION
R120	ERDS2TJ750	Carbon 75 ohms 1/4W
R121	ERDS2TJ101	Carbon 100 ohms 1/4W
R122	ERDS2TJ221	Carbon 220 ohms 1/4W
R123,124	ERDS2TJ473	Carbon 47K ohms 1/4W
R125	ERDS2TJ102	Carbon 1K ohms 1/4W
R126	ERDS2TJ101	Carbon 100 ohms 1/4W
R127	ERDS2TJ334	Carbon 330K ohms 1/4W
R128	ERDS2TJ223	Carbon 22K ohms 1/4W
R129	ERDS2TJ103	Carbon 10K ohms 1/4W
R130	ERDS2TJ472	Carbon 4.7K ohms 1/4W
R131	ERDS2TJ223	Carbon 22K ohms 1/4W
R132	ERDS2TJ103	Carbon 10K ohms 1/4W
R133	ERDS2TJ473	Carbon 47K ohms 1/4W
R134	ERDS2TJ223	Carbon 22K ohms 1/4W
R135,136	ERDS2TJ221	Carbon 220 ohms 1/4W
R137	ERDS2TJ472	Carbon 4.7K ohms 1/4W
R138	ERDS2TJ473	Carbon 47K ohms 1/4W
R139	ERDS2TJ750	Carbon 75 ohms 1/4W
R140	ERDS2TJ221	Carbon 220 ohms 1/4W
R141	ERD10TJ6R8	Carbon 6.8 ohms 1/4W
VR1	EVUE21H25A16	Variable Resistor 10K ohms
C1	ECKF1H103ZF	Ceramic 0.01 µF 50V
C2	ECEA1AU470	Electrolytic 47µF 10V
C3	ECEA1EU4R7	Electrolytic 4.7 µF 25V(SU)
C4,5	ECKF1H103ZF	Ceramic 0.01 µF 50V
C6	ECEA1AS330	Electrolytic 33 µF 10V
C7	ECKF1H103ZF	Ceramic 0.01 µF 50V
C8,9	ECEA1HS3R3	Electrolytic 3.3 µF 50V
C10,12	ECKF1H103ZF	Ceramic 0.01 µF 50V
C13	ECEA1EU4R7	Electrolytic 4.7 µF 25V(SU)
C15-22	ECKF1H103ZF	Ceramic 0.01 µF 50V
C101,102	ECQM1H104JZ	Plastic 0.1 µF 50V
C103-110	ECEA1AU470	Electrolytic 47 µF 10V
C111	ECEA1AU101	Electrolytic 100 µF 10V
C112	ECEA1AS330	Electrolytic 33 µF 10V
C113,114	ECEA1HU010	Electrolytic 1 µF 50V (SU)
C115	ECQB1H332JZ	Plastic 3300 pF 50V
C116	ECQB1H152JZ	Plastic 1500 pF 50V
C117,118	ECEA1AU221	Electrolytic 220 µF 10V
C201	ECKF1H103ZF	Ceramic 0.01 µF 50V
C202,203	ECEA1CU102	Electrolytic 1000 µF 16V
C204	ECEA0JU102	Electrolytic 1000 µF 6.3V
SW1-8	YWSLLY323	Lever Switch
CN1	YWB9BPHKS	9-pin Connector
CN101-104	YWB3BPHKS	3-pin Connector
CN105,201	YWB2BPHKS	2-pin Connector
M5	YWA2QA0134A4	Electrode

REF.NO.	PART NO.	DESCRIPTION
REAR BOARD		
PCB2 (RTL)	YWVKC0208P1A	Printed Circuit Board Assy
R301-308	ERDS2TJ750	Carbon 75 ohms 1/4W
CN301	YWP2244	BNC Connector
CN302	YWP2243	BNC Connector
CN303	YWP2244	BNC Connector
CN304	YWP2243	BNC Connector
CN305	YWP2217	BNC Connector
M7	YWV2SA2563A3	Mounting Angle
LED BOARD		
PCB3 (RTL)	YWVKD0208P1A	Printed Circuit Board Assy
D401-408	LN29RD	LED
M15	YWLH55	LED Spacer
DC 12V TERMINAL BOARD		
PCB4 (RTL)	YWVKH0208E1A	Printed Circuit Board Assy
D302	YWERA1501	Diode
E309	YWSX004B2P	2-pin Terminal
ACCESSORY PARTS/PACKAGING PARTS		
M21	YWV8QA3157AN	Operating Instructions
M22	XZB26X40C05	Polyethylene Bag
M23	XZB35X50C05	Polyethylene Bag
M28	YWV9CA2124AN	Packaging Assy

REF.NO.	PART NO.	DESCRIPTION
SEQUENTIAL SWITCHER WJ-SQ308		
MISCELLANEOUS		
M1	YWV5WA1535A2	Front Panel
M2	YWV3AA0156A3	Dust Proof Parts
M3	YWV5RA0398A4	Switch Knob
M4	YWV2KA0850A1	Main Chassis
M6	YWV5WA1569A2	Rear Panel
M8	YWV5350WB01	Rubber Foot
M9	YWMPS06	Support
M10	YWV5EA1300A2	Upper Cover
M11	YFV7MB0099A4	Safety Label
M14	YWV7QA3130A4	Main Label
MAIN BOARD		
PCB1 (RTL)	YWVKB0308E1A	Printed Circuit Board Assy
IC1,2	YWNJM555D	IC
IC3	UPD65006CA16	IC
IC4	M51951ASL	IC
IC101-105	MC74HC4066N	IC
IC201	YWNJM78M05FA	IC
Q1	2SD637-RS	Transistor
Q2	2SA1254-BC	Transistor
Q3-14	2SD637-RS	Transistor
Q101	2SD637-RS	Transistor
Q102	2SB642-QRS	Transistor
Q103	2SD637-RS	Transistor
Q104	2SB642-QRS	Transistor
Q105	2SD637-RS	Transistor
Q106	2SB642-QRS	Transistor
Q107	2SD637-RS	Transistor
Q108	2SB642-QRS	Transistor
Q109	2SD637-RS	Transistor
Q110	2SB642-QRS	Transistor
Q111	2SD637-RS	Transistor
Q112	2SB642-QRS	Transistor
Q113	2SD637-RS	Transistor
D1-11	MA165	Diode
R1	ERDS2TJ103	Carbon 10K ohms 1/4W
R2	ERDS2TJ104	Carbon 100K ohms 1/4W
R3	ERDS2TJ103	Carbon 10K ohms 1/4W

REF.NO.	PART NO.	DESCRIPTION
R4	ERDS2TJ104	Carbon 100K ohms 1/4W
R5	ERDS2TJ103	Carbon 10K ohms 1/4W
R6	ERDS2TJ104	Carbon 100K ohms 1/4W
R7	ERDS2TJ103	Carbon 10K ohms 1/4W
R8	ERDS2TJ104	Carbon 100K ohms 1/4W
R9	ERDS2TJ103	Carbon 10K ohms 1/4W
R10	ERDS2TJ104	Carbon 100K ohms 1/4W
R11	ERDS2TJ103	Carbon 10K ohms 1/4W
R12	ERDS2TJ104	Carbon 100K ohms 1/4W
R13	ERDS2TJ103	Carbon 10K ohms 1/4W
R14	ERDS2TJ104	Carbon 100K ohms 1/4W
R15	ERDS2TJ103	Carbon 10K ohms 1/4W
R16,17	ERDS2TJ104	Carbon 100K ohms 1/4W
R18	ERDS2TJ102	Carbon 1K ohms 1/4W
R19	ERDS2TJ472	Carbon 4.7K ohms 1/4W
R20	ERDS2TJ102	Carbon 1K ohms 1/4W
R21	ERDS2TJ472	Carbon 4.7K ohms 1/4W
R22	ERDS2TJ225	Carbon 2.2M ohms 1/4W
R23-25	ERDS2TJ472	Carbon 4.7K ohms 1/4W
R26	ERDS2TJ102	Carbon 1K ohms 1/4W
R27	ERDS2TJ474	Carbon 470K ohms 1/4W
R28	ERDS2TJ472	Carbon 4.7K ohms 1/4W
R30,32	ERDS2TJ222	Carbon 2.2K ohms 1/4W
R33-35	ERDS2TJ222	Carbon 2.2K ohms 1/4W
R36	ERDS2TJ223	Carbon 22K ohms 1/4W
R37-41	ERDS2TJ222	Carbon 2.2K ohms 1/4W
R42-65	ERDS2TJ472	Carbon 4.7K ohms 1/4W
R66-73	ERDS2TJ104	Carbon 100K ohms 1/4W
R75-83	ERDS2TJ471	Carbon 470 ohms 1/4W
R84	ERDS2TJ103	Carbon 10K ohms 1/4W
R85	ERDS2TJ473	Carbon 47K ohms 1/4W
R101-116	ERDS2TJ104	Carbon 100K ohms 1/4W
R117,118	ERDS2TJ103	Carbon 10K ohms 1/4W
R119	ERDS2TJ101	Carbon 100 ohms 1/4W
R120	ERDS2TJ750	Carbon 75 ohms 1/4W
R121	ERD10TJ6R8	Carbon 6.8 ohms 1/4W
R122	ERDS2TJ101	Carbon 100 ohms 1/4W
R123-125	ERDS2TJ221	Carbon 220 ohms 1/4W
R126	ERDS2TJ750	Carbon 75 ohms 1/4W
R127	ERDS2TJ473	Carbon 47K ohms 1/4W
R128,129	ERDS2TJ103	Carbon 10K ohms 1/4W
R130	ERDS2TJ101	Carbon 100 ohms 1/4W
R131	ERDS2TJ750	Carbon 75 ohms 1/4W
R132	ERDS2TJ101	Carbon 100 ohms 1/4W
R133	ERD10TJ6R8	Carbon 6.8 ohms 1/4W
R134-136	ERDS2TJ221	Carbon 220 ohms 1/4W
R137	ERDS2TJ750	Carbon 75 ohms 1/4W
R138	ERDS2TJ473	Carbon 47K ohms 1/4W
R139	ERDS2TJ221	Carbon 220 ohms 1/4W
R140,141	ERDS2TJ473	Carbon 47K ohms 1/4W
R142	ERDS2TJ102	Carbon 1K ohms 1/4W
R143	ERDS2TJ104	Carbon 100K ohms 1/4W
R144	ERDS2TJ103	Carbon 10K ohms 1/4W
R145	ERDS2TJ472	Carbon 4.7K ohms 1/4W
R146	ERDS2TJ104	Carbon 100K ohms 1/4W

REF.NO.	PART NO.	DESCRIPTION
R147-149	ERDS2TJ102	Carbon 1K ohms 1/4W
R151	ERDS2TJ102	Carbon 1K ohms 1/4W
R152,153	ERDS2TJ104	Carbon 100K ohms 1/4W
R201	ERQ12AJ100	Fuse Resistor
VR1	EVUE21H25A16	Variable Resistor 1M ohms
VR2	YWRH0615CJ6J	Variable Resistor 2M ohms
C1	ECEA1AS330	Electrolytic 33 µF 10V
C2,3	ECKF1H103ZF	Ceramic 0.01 µF 50V
C4	ECEA1AU101	Electrolytic 100 µF 10V
C5	ECKF1H103ZF	Ceramic 0.01 µF 50V
C6	ECEA1EU4R7	Electrolytic 4.7 µF 25V(SU)
C7	ECEA1HU010	Electrolytic 1 µF 50V (SU)
C8	ECKF1H103ZF	Ceramic 0.01 µF 50V
C9-17	ECQM1H104JZ	Plastic 0.1 µF 50V
C19,20	ECKF1H103ZF	Ceramic 0.01 µF 50V
C31-38	ECKF1H103ZF	Ceramic 0.01 µF 50V
C101-105	ECQM1H104JZ	Plastic 0.1 µF 50V
C106-114	ECEA1AU101	Electrolytic 100 µF 10V
C115,116	ECEA1AU221	Electrolytic 220 µF 10V
C117	ECEA1AU101	Electrolytic 100 µF 10V
C118,119	ECEA1AU221	Electrolytic 220 µF 10V
C120	ECEA1AS330	Electrolytic 33 µF 10V
C121-123	ECQM1H104JZ	Plastic 0.1 µF 50V
C124	ECEA1AU101	Electrolytic 100 µF 10V
C201,202	ECEA1EU102	Electrolytic 1000 µF 25V (SU)
C203	ECKF1H103ZF	Ceramic 0.01 µF 50V
C204	ECEA0JU102	Electrolytic 1000 µF 6.3V
SW1-8	YWSLLY323	Lever Switch
SW9,10	YWSLLY322	Lever Switch
X1	YWCST4R0MGW	Crystal Oscillator
CN1	YWB10BPHKS	10-pin Connector
CN2	YWB12BPHKS	12-pin Connector
CN3	YWB6BPHKS	6-pin Connector
CN101-104	YWB3BPHKS	3-pin Connector
CN201	YWB2BPHKS	2-pin Connector
M5	YWA2QA0134A4	Electrode
M16	YFV7DA0045A4	Heat Sink

REF.NO.	PART NO.	DESCRIPTION
REAR BOARD		
PCB2 (RTL)	YWVKC0308P1A	Printed Circuit Board Assy
D301	MA165	Diode
R301-308	ERDS2TJ750	Carbon 75 ohms 1/4W
R309	ERD10TJ6R8	Carbon 6.8 ohms 1/4W
C301-303	ECKF1H103ZF	Ceramic 0.01 µF 50V
CN301	YWP2244	BNC Connector
CN302	YWP2243	BNC Connector
CN303	YWP2244	BNC Connector
CN304	YWP2243	BNC Connector
CN305	YWP2206	2-pin Connector
CN306	YWT5880AAAA	2-pin BNC Connector
CN307	YW1722582	16-pin Connector
E307	YWSX004B4P	Terminal
M7	YWV2SA2563A3	Mounting Angle
LED BOARD		
PCB3 (RTL)	YWVKD0308P1A	Printed Circuit Board Assy
D401-409	LN29RD	LED
M15	YWLH55	Spacer
DC 12V TERMINAL BOARD		
PCB4 (RTL)	YWVKH0308E1A	Printed Circuit Board Assy
D302	YWERA1501	Diode
E309	YWSX004B2P	Terminal
ACCESSORY PARTS/PACKAGING PARTS		
E101	YWSQ308E16A	Cable
M21	YWV8QA3156AN	Operating Instructions
M22	XZB26X40C05	Polyethylene Bag for Printed
M23	XZB35X50C05	Polyethylene Bag for WJ-SQ308
M24	YWT10X106C03	Polyethylene Bag for Screws
M28	YWV9CA2129AN	Packaging Assy